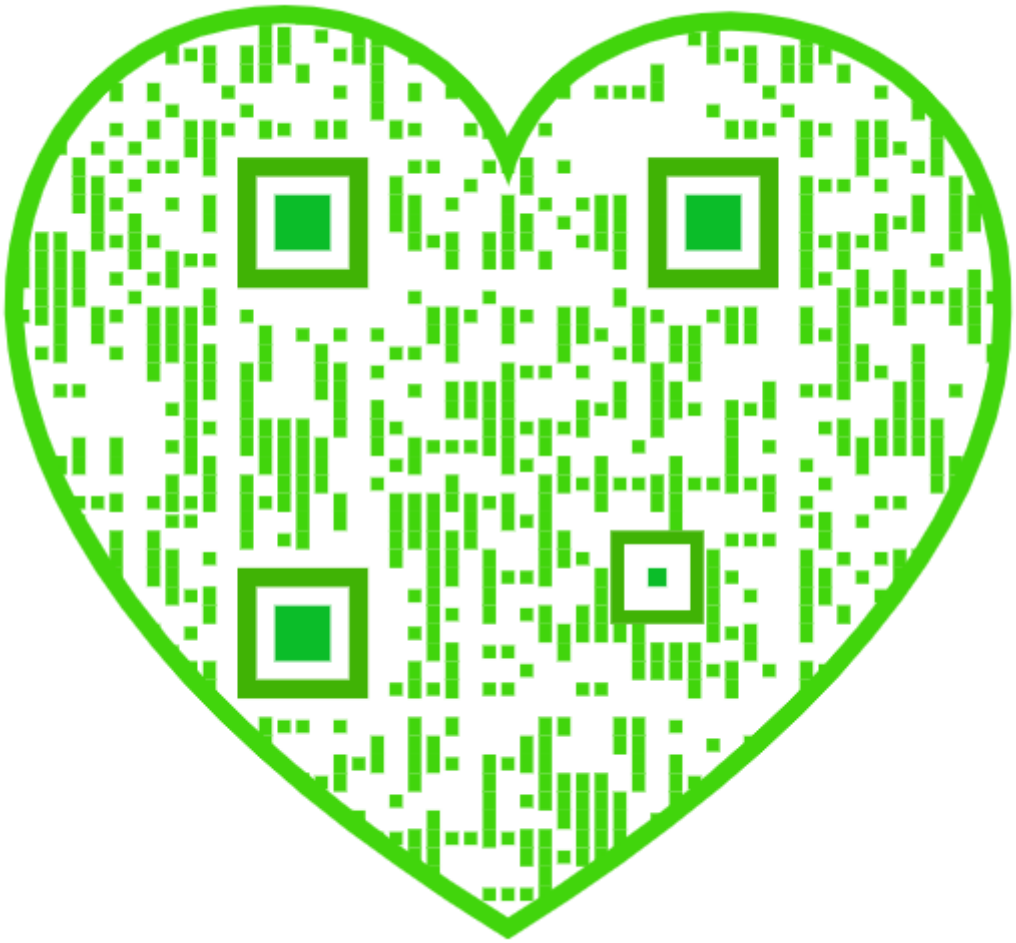
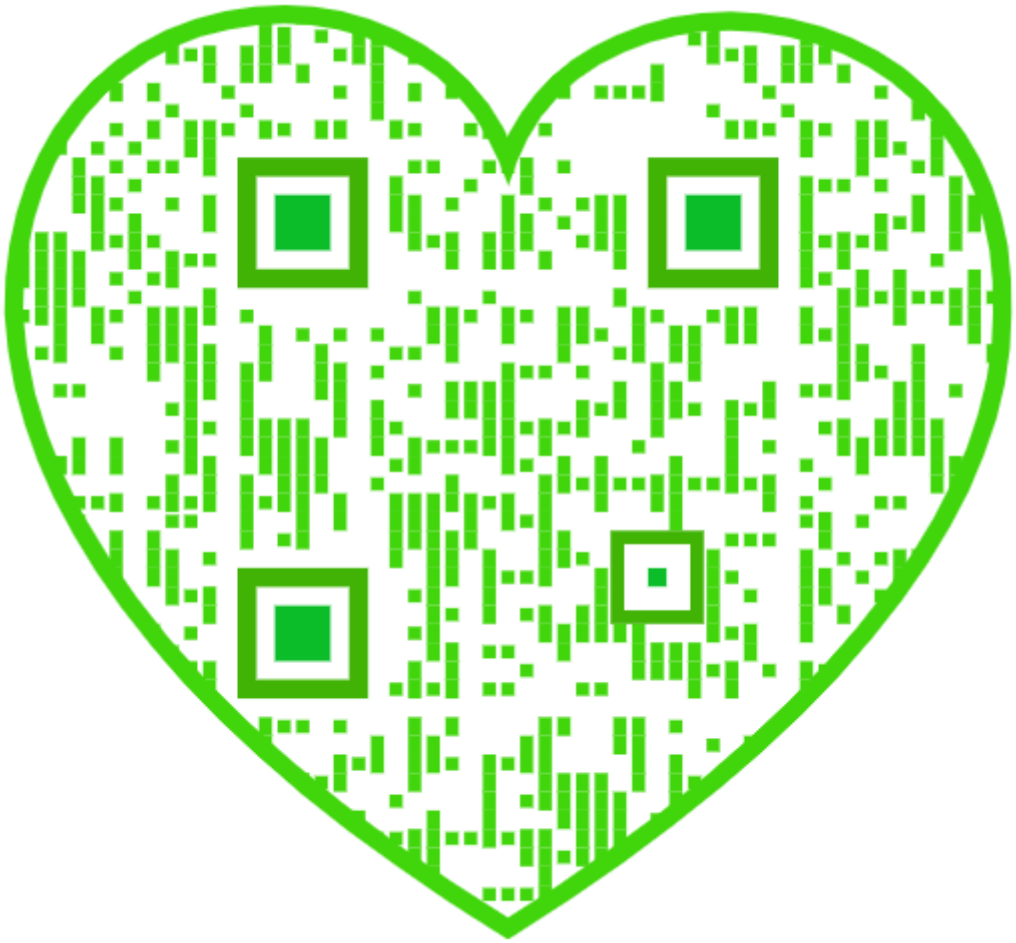
School Devices

BY SHAW AND DONNELL





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SCHOOL DEVICES

A BOOK OF

WAYS AND SUGGESTIONS FOR TEACHERS

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BY

EDWARD R. SHAW
Of the High School, Yonkers, N. Y.

AND

WEBB DONNELL
Of Washington Academy, East Machias, Me.

NEW YORK
E. L. KELLOGG & CO.
1886

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PREFACE.

THIS book has been prepared with the object of presenting in compact form a great number of devices for bringing freshness and life into the school-room.

Unless great vigilance is exercised, monotony creeps in, and becomes the depressing accompaniment of school work. No worker needs more of invention than the teacher, yet no other worker has an environment that is so hostile to its development. The teacher is reaching down continually to minds below him. Day after day spent under these conditions clogs invention.

In recognition of this fact, the great body of progressive teachers seek to take advantage of the best experience of others, adapting to their own needs whatever may be deemed suited thereto. In confirmation of this, we point to the great number who are subscribers to school periodicals for the express purpose of obtaining new suggestions which they may apply in their own school-rooms. But a school journal must cover the whole range of educational work, and, therefore, the space devoted to devices must of neces-

sity be limited. This book aims to supplement the work of the papers by placing in convenient form, for constant use at the teacher's desk, the result of much experience in making the work of the school-room effective and attractive.

While the device is of undoubted advantage in school work, it is important to consider its relative position as a factor in education. Some teachers, in their efforts to secure attention and make their work attractive, have unfortunately lost sight of the proper balance that should be maintained between that which is novel and the fundamental principles which underlie all teaching; and have come to believe, erroneously, that good teaching requires one to be continually seeking for new and striking ways in which to present ideas, substituting brilliancy and variety for the painstaking drill which the majority of teachers find essential to success in their work. A device should be used as a condiment to add spice to the constant iteration and reiteration of first principles.

In addition, however, to that which is to be regarded as partaking purely of the character of a device, there will be found in the book a great number of *ways* and *suggestions* which will be of especial advantage to those who are just entering upon the work of teaching. These, having had no previous experience, must rely to a great extent on that of others. While the idea of teaching by any given formula is not to be advocated, yet it is believed that in a multitude of suggestions for accomplishing a given result, the teacher can

select that which seems best suited to his own needs.

We have inserted a large number of devices upon many topics, not with the idea that they should all be used in any particular case, but to afford a wide range for selection.

While the greater part of the book is fresh and original, having been gathered from our own experience and from the experience of many other teachers whose work has fallen under our observation, we take pleasure in giving credit to the numerous school periodicals of the country from whose pages we have drawn devices which seemed worthy of permanent preservation. In most instances, whatever has been selected has been recast to adapt it more fully to our use.

YONKERS, N. Y., May, 1886.

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SCHOOL DEVICES.

CHAPTER I.

LANGUAGE.

A Way to Prepare Pictures for Young Pupils——Supplying the Proper Word——A Language Lesson——Weekly Plan of Language Work for Lower Grammar Grades——Writing Ordinals——Correcting Bad English——For Beginners in Composition——Word-developing——An Easy Exercise in Composition——Composition from Pictures——Plan for Oral Composition——Debating Exercises——Language drill in Every Lesson——Letter-writing——Matter for Letters——Forms for Business Letters——Papers Written from Recitation Notes——Equivalent Forms of Expression——Device for Use of Capitals——Excerpts to Write Out from Memory——Require Plan in Composition-writing——To Exercise the Imagination——Suggestions about Local Subjects for Compositions——A Letter Written upon the Blackboard by all the Class——Choice of Words——Order of Criticism——A Plan for Rapid Correction of Compositions——To Fold and File Essays——Assigning a Subject for a Composition——Character Sketches——Illustrative Syntax——A Talk on Language——A Grammar Lesson

——Device for Building Up the Conjugation of the Verb ——The Infinitive Mood——Shall and Will——Matter for a Talk on Words——Surnames.

A Way to Prepare Pictures for Young Pupils.—If you use pictures for language work in the lowest grades, an excellent plan is to paste the pictures upon stiff paper or pasteboard, leaving an edge or border around the engraving. On this border write such words as you think the pupil will probably wish to use, but which are beyond his knowledge to spell. In this manner a difficulty to the pupil's composition is removed; for if unaided in this way, he works under a restriction that discourages, because the work is simply too hard.

Supplying the Proper Word.—In the following phrases let the pupil supply the proper words; as, "A —— of gloves," a *pair* of gloves:

A —— of ducks.	A —— of partridges.
A —— of mice.	A —— of oxen.
A —— of bees.	A —— of needles.
A —— of cattle.	A —— of milk.
A —— of birds.	A —— of books.
A —— of horses.	A —— of paper.

A Language Lesson.—Put these sentences upon the board and have the pupils fill in the blanks. If there is not time during school hours to write the sentences on the board, transcribe them upon blank cards and let the pupils copy these upon their slates. While it may take longer to write the cards, they can be used

again and again, and taken to another school, should the teacher change his field of labor.

In these sentences supply the missing pronoun:

(1) Father drove Martha and —— to school.
(2) Let James and —— carry it.
(3) May John and —— get a pail of water?
(4) They have all gone but —— ——.
(5) —— boys are studying Latin.
(6) The teacher said —— girls must come early to-night.
(7) The difference between you and —— is that you have two study periods a day, while I have none.
(8) To —— did you give it?
(9) Who borrowed my slate? ——.
(10) Ralph is older than ——.
(11) —— do you wish to see?

In the following supply the omitted verb:

(1) I am more tired than you; will you let me —— down on the lounge?
(2) Yesterday I —— on the sofa all the morning.
(3) Is the table —— yet?
(4) Fetch a chair for Mr. Smith, Jane. —— down, please, sir.
(5) —— the magazine on the table and let it —— there.
(6) The dog came in and —— down before the table.
(7) He has —— away.
(8) He was ——ing on the bed when I came home.
(9) The carpenter has —— the posts on the ground, where he is to build the fence.

Let the work be brought to the recitation, and the

sentences read, the class deciding when the correct form is used.

Weekly Plan of Language Work for Lower Grammar Grades.—*Monday*—Letter-writing; drill in naming parts of speech.

Tuesday—Written reproduction of some selection; drill in writing plurals and possessives.

Wednesday—Reading of short poems; practice in talking; children telling the story of the poem.

Thursday—Memory exercise; recitation of quotations from authors; principal element of a sentence.

Friday—Reviews.

Writing Ordinals.—The proper form for writing first, second, third, fourth, etc., is 1st, 2nd, 3rd, 4th, and *not* 1st, 2nd, 3rd, 4th; because 4th is as really *fourth* as the full word. To show that this is true, let the teacher write on the board 5, and ask the pupils to read it. They will say "Five." In another place write "th," and ask them to pronounce it also. In still another place write "5th," and ask them to read it. They must say "Fifth." If it be true to write fifth, "5th;" fifteenth, 15th, we must also write as one word 1st, 2nd, 3rd.

Correcting Bad English.—A valuable lesson in grammar can be made by showing to the class the errors which are most commonly made in speaking. Give a sentence containing the word in question, pointing out the error, and write the correct form of the word on the board.

Many people say "I done it," for "I did it;" "I have

got it," for "I have it;" "He ain't there," for "He isn't there;" "I hain't got none," for "I haven't any." The verbs *lay* and *lie* are commonly interchanged. After teaching the inflection of these verbs, it will assist the pupil in using them correctly if he be made to see that *lay* must have an object, expressed or understood, and that *lie* has not. Now, if he be taught to consider in using the words whether an object is expressed or understood, he will soon come to use these verbs properly, and will readily see that such a sentence as "The boat *lays* at her moorings" is wrong, for the reason that the boat cannot *lay* anything. Other improper usages of words will occur to the teacher to be used in this connection.

For Beginners in Composition.—For composition work with small pupils select simple topics, and such as are sure to be familiar to them. The following questions are suggested which they may answer in the form of a narrative:

At what time did you start for school?

What did you bring with you?

Who came with you?

In what did you carry your books?

Tell what you can about the books.

What did you see on your way?

Whom did you meet?

What did you say to them, and what replies did they make?

Whom did you find in the school-house?

What did you do after you came into the school-room?

To such questions as the following, as extended answers as possible should be required:

What is found inside an apple when it is cut open?

What is the material of a little girl's apron?

Of what are shoes made?

Who makes the leather, and from what is it made?

What covers the outside of a tree, and what is its usual color?

Of what are baskets made?

Describe the different parts of an apple.

Tell all you can about the colors of flowers.

How many holidays are there in a year? Name them.

Mention the different things that grow in your garden.

What animals like to eat apples?

What do animals eat besides apples?

Word-developing.—Say to the class, "There is a man standing on a small island in the middle of a lake. How will he get to the shore?" Some will answer, "He will swim;" others, "He will row over in a boat." Ask them to describe the manner of rowing, and let a figure of an oar be drawn on the board. Write "oars," "rowed," "swim," upon the board. "If the man stops rowing, what will happen to the boat?" "It will float," "It will drift." Ask for the full meaning of "float" and "drift," and write them on the board. "What will happen if the boat gets into the rapids?" "Upset," will be answered. This may be continued until a sufficient number of words have been developed. Let each word be correctly spelled and pronounced, and accurately defined. Let each

pupil in turn form a sentence with one or more of these words in it, and write it on the board. Finally, tell the class to write out the whole story which has been outlined, and bring it to be read at the next recitation.

An Easy Exercise in Composition.—Having spoken to a class about the senses and what they tell us, direct the class to write out what their senses tell them about the following things: *an apple, a knife, a lead-pencil, a bottle of ink, a flower, a clock, a piece of chalk, a box, a piece of charcoal, etc.*

Compositions from Pictures.—If pupils are asked to bring to school all the pictures they can get from books and papers, the teacher will thus obtain much good material for composition work. Take the pictures, trim them close to the edge of the engraving so as to cut off all reading, then paste them upon pieces of pasteboard, and they are in condition for long wear. Distribute them to pupils and ask them to write what they can about the picture. When a pupil has written about a picture, let him write his name upon the back of it, so that it may not be given him a second time.

Plan for Oral Composition.—Carry to the class some entertaining book—either a story or a description of travel—and have a page or two read by one of the class. The book is to be closed at this point and another asked to tell what has been read. The rest may correct any errors either in language or in the statement of what has been read. When a sufficient

amount has been produced, ask all the members of the class to write out what they have heard and bring it in the next day. After some practice in this kind of work, they may be allowed to take the main points of the story or description and add any thoughts of their own which are appropriate to the subject.

Debating Exercises.—Select some subject within the capacity of the pupils, and appoint a number to debate it. If the number be six, assign three to the affirmative and three to the negative side. Let a jury of scholars be chosen, who, when all the arguments are presented, shall decide for the one side or the other. It will be well to have the arguments presented in alternate order; first, one upon the affirmative side, followed by one upon the negative.

Select subjects that are of practical importance and of general interest, and in regard to which the pupils can readily gain information either by inquiry or reading.

Language-drill in Every Lesson.—Make every lesson a drill in language. Whatever be the topic, correct all errors in grammar and pronunciation. Encourage your pupils to choose carefully and wisely the form in which they state either questions or answers. Wise guidance in this direction will bear rich fruit in later years.

Letter-writing.—In connection with the work in grammar and rhetoric, see that your pupils have plenty of practice in writing letters. Probably in no branch are pupils found so deficient, on leaving school,

as in this. Have frequent exercises in writing business letters, and in these see that the following points are observed: (*a*) They should be brief and to the point. (*b*) They should contain nothing but matter relating to the business in question. (*c*) Nothing should be written in such a manner as to allow a chance of misunderstanding. (*d*) The date, name, and address of the writer should be plainly written.

In ordinary letters of friendship, while it is absurd to give rules, it is of advantage to bring out the points given below. Pupils frequently have the erroneous idea that an unusual and formal style must be used in letter-writing, thus destroying the simplicity and naturalness of their productions.

1. Letters should be written in a conversational style, and this can be obtained by writing just as one would speak to another, face to face.

2. Unless the letter is to a very intimate friend, the writer should say but little of himself.

3. Let it be remembered that in writing a letter one is placing in black and white that which may stand for years. Care should therefore be exercised that nothing be written which one might afterwards regret.

Matter for Letters.—1. Write a letter to a classmate who left school a week ago, relating whatever of interest has occurred in school for a few days past.

2. Write a letter to a friend describing how you won in one of your games.

3. Write a letter to a friend inviting her to a game of tennis or croquet to-morrow afternoon.

4. Write a letter in the third person inviting Mrs. Kate Wildey to dinner.

5. Write a letter to your mother, supposing her to be away from home for a week.

6. Write a letter to a friend regretting that you were unable to drive over to see him last Saturday.

Forms of Business Letters.—Give your pupils such forms of letters as one would use in many different kinds of business. Such, for instance, as the following to a publishing house:

Providence, R. I., Dec. 5, 1885.

Houghton, Mifflin & Co.

Gentlemen,—

Enclosed find four dollars ($4), for which please send the Atlantic Monthly for one year to my address.

Yours truly,

J. L. Parsons.

Papers Written from Recitation Notes.—Not only should the pupil be required to reproduce from material placed before him or related by the teacher, but he should be required to take notes in the recitation and elaborate them, reading them the next day in class as called upon. If the pupil is studying science, let him write out a full report of experiments made by himself or by the teacher. These may be illustrated by drawings of the apparatus used. It will be well to allow illustrations in any of the compositions if the writer is capable of producing them. For such work unruled paper should be used.

Equivalent Forms of Expression.—As a drill in language, ask your class to change a given expression into one containing the same idea, but set forth in different language. Ask them to express dry, matter-of-

fact prose in a lively, poetic form; and, in general, let them take any sentence and express it in a different way. Give them newspaper-cuttings to express in a clearer, more incisive manner. They will thus get in the habit of *choosing* the form of speech which will most accurately express the meaning desired.

Device for Use of Capitals.—Let the pupils of the grammar grades copy in their note-books this condensed plan of the rules for the use of capitals:

Every { *sentence*, *line of poetry*, *direct quotation*, *proper name*, *word derived from a proper name*, *name of the Deity*, *expression used to designate the Bible*, *title of honor or respect*, *important word in headings*, *noun vividly personified*, *The pronoun I*, *The interjection O* } *should begin with a capital.*

Excerpts to Write Out from Memory.—In the newspapers will be found many short stories or descriptions, well written and entertaining, which it will pay to cut out and paste upon cards for use in reproduction. Let a card be handed to each student, allow three or four minutes in which to read the printed sketch, and then collect them. After which require each one to write out from memory what he has read. Below are given excerpts to show what is meant:

HOW THE JINGLET GETS INSIDE.

The making of sleigh-bells is quite an art. The little iron ball is too big to be put in through the holes in the bell, and yet it is inside. How did it get there? The little iron ball is called the "jinglet." When you shake the sleigh-bell it jingles. In making the bell this jinglet is put inside a little ball of mud, just the shape of the inside of the bell. This mud ball with the jinglet inside is placed in the mould of the outside, and the metal is poured in, which fills up the space between the ball and the mould. When the mould is taken off, you see a sleigh-bell, but it will not ring, as it is full of dirt. The hot metal dries this, so that it can be shaken out. When this has been done the little iron jinglet will be found inside the bell, and the bell will ring. It took a great many years to think out the way to make a sleigh-bell.—*The Christian Union.*

SAVING A LIFE.

One day last winter, '83–'84, when the mercury was down somewhere in the forties below, an open sleigh stage was making its way along a mountain road between two Montana towns. The only passengers were a woman and her young child. They were scantily clad for the rigorous weather, and the woman removed one of her wraps to protect the child. The

driver discerned that she was growing drowsy, and warned her of the deadly peril of falling asleep. It was of no use, nor did the vigorous shaking he gave her serve to keep her awake. Finally the driver seized her, threw her out into the road, and drove off with the child at a rapid pace. This last expedient was successful. Awakened by the shock of the fall, the woman saw the stage disappearing with her child. Her maternal instincts were aroused. She ran after the stage as fast as she could; the driver slackened up a little, but did not stop till he saw that the poor mother was thoroughly warmed by the exercise. Her life was saved. An hour later the stage reached a station, where buffalo robes were obtained to protect her against the deadly cold for the remainder of the journey.—*The Youth's Companion.*

Require Plan in Composition-writing.—In composition work the pupil should be taught to plan his work in a logical way. He should first make an outline of the subject, arranging the topics in divisions and subdivisions. After some practice of this sort, upon selecting a subject he will instinctively begin to analyze it, picking out the chief points, and the different ways in which these chief points may be treated.

To Exercise the Imagination.—The following are designed for written exercises. The title, directions, and hints may be written upon the board. Each pupil should write the title properly upon his paper and then, with the aid of the suggestions given, relate the imaginary details.

1. *The adventures of a five-cent piece.*

Tell where and when it was coined. Who first ob-

tained it from the mint. How many times it was spent, and for what purposes. Where it is now.

2. *The life of a canary-bird.*

Imagine a canary telling all that has happened to him from the first day of his life. Where he has lived. What he has done. What he thinks of some of the people he has seen. What he likes to do. What he would do if he could.

3. *A family of five people at tea.*

Imagine five people at tea. Describe and name them. Tell what they are talking about. Tell some of the things they say. Tell where they go as they leave the room.

4. *A brook.*

Imagine a pretty little brook, winding about among the meadows and through the woods. Tell where it starts, and where it expects to go to. What it finds in its way, and why it is so crooked. What flowers grow upon its banks. What it does for the flowers that grow on its banks. Tell about a big shady pool in one place and what lives there. Tell about a shallow place where the sun shines, and the stones at the bottom of this place. How people cross the brook; what animals do when they come to it. What happened once at a certain place. What makes it grow larger; where it goes.

5. *What I should like to do.*

Imagine that you are now able to do just as you please; state what you would do. Give particulars and reasons for your choice.

Suggestions about Local Subjects for Compositions.—There is, in almost every locality, some folk-lore, legend, or tradition. Let the pupils hunt up these and embody them in a paper. "Historical Hereabouts" is a good subject for such a paper. For an instance of tradition, say to the class, "I have heard a story of a hermit who used to live about here years ago. Many things are told of him which are interesting. Now, I wish you to inquire here and there, learn all you can about him, and make an interesting paper to read to the class or school."

Again, the teacher may say, "You have seen a piece of marble in the rough, or after it has been sawed, and also after it has been polished. The way in which this is done is very interesting. Who would like to go to the marble-cutter's, watch the work, and then write a description of it?"

A Letter Written upon Blackboard by All the Class.—Send a pupil to the board and tell him to begin a letter. After he has written a few sentences, send another to add a new thought, and then another and another. The last pupil is told to close the letter.

Choice of Words.—To create the habit of choosing the best word to express an idea or describe an object, place upon the board sentences arranged as in the following, and ask the pupil to choose the proper word. The examples given may be extended by the teacher:

1. She has { nice / agreeable / graceful } manners.
2. She has a { lovely / pretty / elegant } dress.

3. He is { some / somewhat / much } better.

4. The weather is { fearfully / terribly / unusually } cold.

5. She looks very { prettily. / pretty. }

6. Almost { everybody / every one } went away.

7. It is a { real / really } nice book.

8. The stars look { bright. / brightly. }

9. This is { easier / more easily } said than done.

10. Mine is not { as / so } good as his.

11. It is a { magnificent / splendid / fine / beautiful } day.

12. Her dress looks { odd. / oddly. }

Order of Criticism.—The following order of criticism for written work may be used by teachers and by students in deciding upon the merits and defects of compositions. It will be seen that the first point to be noticed in any given article is the *thought, taken as a whole.* It will be apparent that this is of more consequence than the spelling and the use of capitals. While these points are important, the student should be made to feel that in this work he must have a clear

conception of the thought before beginning to write, and that this will be first taken into consideration by the teacher. Other points follow in the order of importance.

I. The thought.
II. Order of thought.
III. Expression, or use of language.
    1. Use of words.
    2. Style.
    3. Grouping of sentences.
    4. Capital letters.
    5. Spelling.
    6. General appearance.

Frequently it is profitable to collect all the essays, assign them to different members of the class, asking each to read the essay and write a criticism upon it. If the criticism is unduly severe and captious, hand both essay and criticism to another student who will give a just estimate of both.

Plan for Rapid Correction of Compositions.—Where a large number of impromptu compositions, or reproductions from memory, are handed in every few days, and it is found difficult to go over each one carefully, it is well to use the following plan. Select at random eight or ten of the papers and correct them, noting carefully the characteristic errors. Bring these before the class and make clear your corrections. These corrections will probably apply to a large part of the papers. At the next writing of compositions, take eight or ten papers belonging to other pupils and

continue in this way until each pupil's work has passed under your eye.

To Fold and File Essays.—Essays should be folded lengthwise and placed in a pile so that the centre of the page, where the fold comes, shall be upon the right hand. Then let the name be written across the top, and a rubber band placed about them. Any desired essay can be quickly found by running over the bunch with the right hand, each essay being raised entire, as there are no edges of leaves on the right side. In obliging pupils to follow this plan, the teacher trains them to file papers as business men do.

Assigning a Subject for a Composition.—Often a subject may be invested with interest and given a strong start by some such introduction as the following: "The subject I wish to assign for the next composition is about a wonderful instrument. In all the range of inventions since the world began, not one can be compared with this. The more you think of it and study it, the more strongly will you be impressed with the great skill of the inventor, and the more plainly will you see the many marvellous uses to which it is adapted, and how much has depended on it during all time. The subject is—(the teacher here writes upon the blackboard) The Human Hand.

Character Sketches.—Select from fiction or travels a few sketches of character and read these to the class for illustrations. As soon as the class has a clear idea of what is meant by a character sketch, say that for the next composition you shall expect

from each a character sketch. They are not to name the person, but may take any character they know. Of course, the teacher will use time enough in reading the character sketches, and in speaking of them, to show the class that in their first attempts they should select some person whose characteristics are strongly marked.

Illustrative Syntax.—Instead of giving pupils false syntax to correct, vary the work by writing on the board as many of the rules of syntax as you wish to give for a lesson, and ask the pupils to write sentences to illustrate these. If, for instance, the rules given include these, "Two or more singular subjects connected by *or* or *nor* require a singular verb," "Two or more singular subjects connected by *and* require a plural verb," the pupil should write on his slate such sentences as the following: "Neither gold nor silver was found in the mine," "Either John or Henry is going," "Mary and Susan are going," "The sun and the moon were visible."

A Talk on Language.—To break the monotony of the usual work and at the same time to increase the knowledge of the pupils, give a short talk on language, such as a teacher gave one morning. He said: "Now, if you will give me your attention for a few moments, we will talk over some of the mistakes that people are apt to make in conversation. For instance, I heard one of the scholars say to another, as I came into the school room, 'I'll go a little *ways* with you.' He probably meant that he would go a little *way*, or a short distance, with his companion. I also heard one

of the girls say to another, 'He don't know.' Will any one tell me the full form of 'don't?' Several voices, 'Do not.' Very well, 'He do not know' does not sound correct. What should have been said? '*He doesn't* know.'

"I frequently hear one pupil say to another, 'It's time we went.' *Went* denotes past time. What is the proper thing to say? '*It's time to go*,' or, better, 'It is time we should go.'"

The teacher continued to show in the same way the incorrectness of such expressions as, *This is the longest* (referring to two); *I feel badly; Read the last two verses; Quite a number; I would as leave go; Where have you been to? He ain't got none.*

A Grammar Lesson.—Many incorrect forms of speech are here given which should be brought to the attention of the pupils, and the proper corrections made. Let the pupils make a memorandum of the corrections in their note-book:

A number of knives and forks *were* taken. He told John and *I*, when a person acts like that, *they* ought to be punished. He said it was *him*. Everybody has a right to *their* opinion. *These* kind of apples *are* not sweet. I am going to *lay* down. She *set* down on the chair. He would have *went*. She *done* right. They *hadn't ought* to. I have *got* one. I *says*. He repeated it *again*. He took it off *of* the line. He or his son *have* gone. I don't know but *what* I shall do it. She seldom *ever* went out. He has lots of pictures. The *two first* verses. He is the *largest* of the two. He *enjoys poor health*. *Was* you speaking? Not *as* I know of. Have you *shook* the carpet? They have

broke the stick. I *see* him two days ago. Give me *them* grapes. If I *was* rich, I would go. *Seldom* or *ever*. He is known *through* the United States. Two *pair* of gloves. I should think that John *was* the oldest. This house *to let*. The stick is twelve *foot* long. He is living *at* Boston. *Such another* man. They covered it *over*. A *new pair* of shoes. Combined together. *Almost no* money. *Somewheres* in the country. I *had* rather go. A couple of pounds. I am short in comparison *to* you. The meat was all eaten *up*. I fell *on* the floor. He is averse *to* it. That *ain't*. Nobody *else* saw him. The other *one*. They *mutually* agreed. *Down* on him. They were all *drownded*. I called to *price* your goods. His actions admit *of* no apology. He left his books *to* home.

Device for Building Up Conjugation of the Verb.—If the pupil can be made to see the *principle* by which the various tenses of the verb are built up, he will be able to apply it readily in forming the required part of any verb. If the verb "love" is taken, begin with the present, and show that the simple form of the verb (love) is found in all the persons except the second and third persons singular, which add "st" and "s" respectively.

Next show that in the past or imperfect tense the past participle (loved) is used in all the forms but the second person singular, which adds to this "st."

Tell the class that the sign of the future is "shall" or "will;" but when "shall" is used for the first person, "will" must be used for the second and third persons; and when "will" is used for the first person, "shall" must occur in the second and third.

Then make it understood that the perfect, pluperfect, and future-perfect tenses end with the past participle; and that the sign of the perfect is "have," as, "I have loved," etc.; that the sign of the pluperfect is "had," and that of the future perfect is "shall have" or "will have;" but that when "shall have" is used in the first person, the forms of "will have" must occur in the second and third, and that when "will have" is used in the first person, "shall have" must occur in the second and third.

State that the signs of the potential mood are "may," "can," "must," for the present; "might," "could," "would," "should," for the past, to be used with the simple verb "love;" as, "I may love," or "I might love;" and that *have* added to the signs of the present give the perfect, and to the signs of the past give the pluperfect; as, "may have," "might have."

Show them that *if* is the sign of the subjunctive mood, to be used in the present with the simple verb "love," and in the past with the past participle, and that the second and third persons singular do not add "st" and "s."

The infinitive mood should be made clear to the class as introduced by the preposition "to."

After finishing the active voice, and explaining that this represents the subject of the verb as *acting*, show that the passive voice is formed by placing after the required tense of the verb "to be" the past participle of the verb to be made passive, and explain what the word *passive* means.

The pupils should practise writing out different verbs on slate or paper, following these rules.

In using these suggestions, the teacher will give one

tense at a time, letting that grow before the class by writing the forms upon the board, and insisting upon their thorough committal to memory before the next tense is written out. Each day review all the tenses previously built up, and drill upon the signs of each tense. To test a class's knowledge of the way in which the passive voice is built up, direct pupils to write out the passive voice of some verb not met with in all the persons of the passive, as, for instance, the verb *eat.*

The Infinitive Mood.—In teaching the use and government of the infinitive give such a sentence as, "We strive to save," in which is given an example of a finite verb and one not finite, or *in*finite. Show that a verb which agrees with its subject is a *limited* verb, and one which has no subject, as *save*, is *unlimited.* Show that *finite* and *infinite* are the same as *limited* and *unlimited.* In this way the pupils will understand what is meant by a finite verb and an infinitive. Show that in parsing an infinitive as governed by the preposition *to*, it is regarded in the light of a noun.

Shall and Will.—In the first person *will* expresses an intention or a promise, as, "I will go," meaning I intend or promise to go. *Will* should not be used as a question with the first person; as, "Will I come?"

Will in the second person may be used as a command, or simply to foretell what will occur; as, "You will come with me." "You will do nothing of the kind." As a question, *will* in the second person asks the intention of the person; as, "Will you do it?"

Will in the third person declares or foretells; as, "He will be here."

Shall in the first person declares or foretells, with no reference to wish; as, "I shall be present."

As a question, *shall* in the first person makes an inquiry, or asks direction; as, "Shall I find you there?" "Shall I go?" that is, decide for me.

Shall in the second person expresses authority, and therefore promises, commands, or threatens.

Examples of Correct Usage. — Expressing future action: I shall ride to the city to-morrow. Expressing determination: You shall go. Consulting the judgment of another: Shall I go with him? Inquiry concerning another's intention: At what price shall you sell? Inquiry concerning another's desire: Will you have an orange? Inquiry concerning future action: Will he go with us?

Let the following blanks be filled with *shall* or *will.*

I —— leave for Boston next week. I —— have my own way. You —— be punished. They —— reach here at noon. —— I put coal on the fire? —— I write to your brother? —— he come with us? How —— I solve this problem? —— you have more coffee? —— you write your name here? At what place —— you buy it? Where —— you be to-morrow? —— we have a good time? —— we see you this evening? When —— you begin? —— you have a few of them? If he goes, —— you? What —— you do about it? —— your father punish you? Pupils —— please write their names. We —— do it. They —— find it hard. —— he be permitted to go? —— I be in time? When —— we finish our work?

Matter for a Talk on Words.—Use the following material for a talk on words, taking up a few words at a lesson.

The subject is capable of being expanded to a greater extent than we have space to show here, but the teacher, with this material to start with, can select other words and carry the subject of derivation to a greater length. In connection with this show your class how words are built up by prefixes and suffixes, and explain the meaning which these give to words.

CURFEW. From French words meaning *cover up your fire.* A bell was formerly rung at eight o'clock, when people were expected to retire.

TARIFF. From *Tarifa*, a Moorish fortress in Southern Spain, from which position the Moors used to levy taxes on passing ships for the merchandise which they transported.

GOD'S ACRE. A burial-ground, referring to the idea of the harvest which the Deity will garner at the resurrection of the dead.

TANTALIZE. From "Tantalus," who was doomed to be continually in sight of water but not allowed to touch it.

PASTOR. From the Latin word, meaning a *shepherd.*

LUNACY. From *Luna*, the moon, a word kindred with *moonshine*, or folly.

CAMBRIC. From *Cambray*, a place where this kind of cloth was first made.

TRIVIAL. From Latin words meaning *three roads.* That is, such talk as one hears on the corners of streets.

SINCERE. From Latin words meaning *without wax;* that is, furniture whose defects were not concealed by filling with wax.

ATONEMENT. *At-one*-ment, showing the united relation of God and man.

GOOD-BYE. "God be wi' ye."

TOPSY-TURVY. "Topside t'other way."

SIERRA. Saw-like. Referring to the jagged appearance of the tops of these mountains.

MISERY. From *miser*, a word meaning wretched.

METHODIST. A name applied to the founders of the sect who were *methodical* in their devotions.

PAPER. From the Egyptian *papyrus*, which was used for writing purposes.

DAHLIA. From *Dahl*, a Swede who first cultivated the plant.

STENTORIAN. From Stentor, a loud-voiced Homeric orator.

SURNAME. From words denoting a *name in addition.*

Surnames.—The subject of surnames affords material for an interesting talk on words. Explain to your class that at one time it was customary for people to have but one name; finally, a common word was used to designate a particular clan or family.

Show how certain names may have arisen from marked peculiarities in those to whom they were applied, as Longfellow, Blackman, Reed (Red), Brown, White, and Gray. When such characteristic names were used up, new names were sought from various sources,—from animals, as Wolfe, Lyons; and from natural objects, as Stone, Sand; from adjectives, as Strong, Swift, Wise, Rich. Point out the fact that the Scotch *Mac*, and the Welsh *Ap*, and the Norman *Fitz*, mean *the son of*; thus, *MacDougal* means the *son of Dougal*, or Douglass; Fitzhugh, *the son of Hugh.*

CHAPTER II.

GEOGRAPHY.

Order of Topics for the Study of the Grand Divisions of the Earth——How to Mould——Map-drawing——A Normal Lesson——Production Map——Zigzag Journeys——Tracing——A Guessing Exercise——Geography a Means of Culture——Suggestive Model for an Examination in Geography.

Order of Topics for the Study of the Grand Divisions of the Earth.

1. Striking characteristics.
2. Brief history.
3. Position, etc.
4. Surface.
   1. Highlands.
   2. Lowlands.
   3. Profile.
   4. Progressive map.
5. Drainage.
6. Political divisions.
7. Natural divisions.
   1. Border water.
   2. Projections.
   3. Isthmuses.
8. Climate.
   1. Causes.
   2. Peculiarities.
   3. Healthfulness.
9. Life.
   1. Vegetable.
   2. Animal.
   3. Human.

10. Productions.
11. Exports.
12. Imports
13. Prominent cities.
14. Journeys.
15. Comparisons.

Outline for North America by the use of moulding-board, wall-map, and drawing.

1. POSITION.—Use the globe for this.

2. GENERAL FORM.—Let pupil show this by drawing outline on the board.

3. SIZE. { Comparative. / Absolute.

4. GENERAL BOUNDARIES.

5. OUTLINE, COAST POINTS, AND ISLANDS.—Use the moulding-board for this. As the different points on the coast are moulded, speak of any peculiarity pertaining to them, as points dangerous to seamen, etc. Discuss the waters surrounding a peninsula before taking up the peninsula itself, as Florida and the surrounding waters.

Let the pupils draw outline on slates as the outline is placed on the board.

6. SURFACE.

(*a*) General relief. {
1. Atlantic Highlands.
2. Pacific Highlands.
3. Central plain.
4. Height of land.
5. Slopes. (N., S., E., and W.)

After moulding the outline, build up 'the general relief as given by the pupils.

(*b*) Separate each mountain system and plateau distinctly. Separate the system into ranges and peaks.

See that pupils can pronounce and spell all names. Speak of the scenery, productions, etc., of individual portions. Have pupils draw profile outlines from east to west, and north to south.

7. DRAINAGE.—Speak of the circulation from the ocean back again to the ocean. Show the water-sheds upon the moulding-board. Separate the rivers into systems. Mould the principal rivers and lakes. Bring out interesting points, such as Niagara, Yosemite, etc.

8. SOIL.—From the surface and drainage lead the class to infer the character of the soil. Bring out contrasts, such as the barrenness of Labrador and the fertility of the Mississippi Valley.

9. CLIMATE.—Three belts. { Northern. Central. Southern.

Lead the pupil to infer the climate from the position, after explaining the influence of elevation, proximity to oceans, slope, etc.

10. PLANTS, ANIMALS, MINERALS, ETC.—Use the three belts given above. Many of the points may be inferred from the surface, soil, and climate.

11. POLITICAL DIVISIONS, PEOPLE, ETC.—Take only the large divisions. Make the people of the countries real by pictures, stories, and articles belonging to them.

12. CITIES.—Name, locate, and describe some of the most important cities. Take imaginary journeys from one city to another, and let pupils describe surface, soil, climate, productions, and people of the country through which they pass. Illustrate these journeys on the moulding-board. Points of history may be brought up incidentally. Have a complete map of

North America drawn for review. Use the same plan for a state or country.

Read chapter xii., "Fitch's Lectures on Teaching."

How to Mould.—There are many teachers who, having read of moulding as an aid in the study of geography, would like to try it in their schools, yet do not know how to make the trial. The directions given below will afford a good basis to begin upon, and from the practice of these suggestions the teacher will gain sufficient experience to pursue moulding in his classes.

Let a board five feet long and four feet wide be made by taking five lengths out from a board one foot wide and half an inch thick. Place these side by side and fasten them to batten placed beneath. Around the edges of this board nail strips half an inch thick, and one inch and a half wide. The moulding will thus project above the board one inch. This may be placed on a table or desk, and slightly inclined. Place in this about a half bushel of moist loam,—not too moist, as it would then stick to the fingers, but with moisture sufficient to render it capable of retaining any shape to which it may be moulded.

Take for the first trial South America, as this presents an easy outline. An outline may be drawn and the loam filled in between the lines, or, better still, let the outline be formed as the work progresses. The pupils should do the work with such assistance as is necessary from the teacher. Have a wall-map in sight of the subject in hand, also the relief-maps to be found in many of the geographies. Let mountains and rivers, lakes and plains, be represented by the

appropriate elevation, level, or depression in the loam. Kindle additional enthusiasm by asking one pupil to bring some saltpetre; another, Cayenne pepper; others, coffee, berries, wool, pieces of iron, gold and silver foil, or paper, cotton, leather, tobacco-leaf, glass, to represent diamonds, spices, etc. Let the pupils place these in their proper localities upon the moulded continent, and South America will become *real* to them.

Map-drawing.—Have frequent map-drawing from memory, using no construction lines. Let it be done quickly and do not be too precise in your requirements. A pupil who can draw quickly the outline of a country or a State, no matter if not perfectly true, and can locate cities, rivers, etc., has gained a knowledge of geography that will outlast his school examinations.

A Normal Lesson.—The following lesson in geography is one given at a normal school, and is introduced here on account of its eminent adaptibility to other parts of geography. The average age of the class to which it was given was eleven years.

State Work—Texas.

General plan.
Name and history.
Boundaries.
Coast-line. { Bays. / Capes, etc.
Draw a map of the State.
Mould it.
Surface. { Direction of slope. / Mountains, plateaus.
Rivers.
Soil.

Climate. { Temperature. Humidity. Healthfulness.

Productions.

Occupations.

Cities. { Capital. Metropolis. Oldest city, etc.

Pictures and interesting facts to illustrate any part of the work.

In a previous lesson the class had compared the the State, in size, with New England, the Middle States, etc., and had learned some of the important facts of its history, with mention of Generals Scott and Taylor. One pupil was directed to give the boundaries from a wall-map, and the drill was as follows:

As the pupil pointed, the class named the boundary; another pupil named State, and class told which boundary it formed. Then a pupil was called upon to close his eyes and bound; class did the same. The bays, capes, and coast-line were treated in a similar way. Pupils were sent to the board who drew rapidly, without construction-lines, the outline of the State from a wall-map. The teacher pointed and traced parts on the wall-map; pupils traced the same on the outline. The teacher had moulded the State, and three or four came to the table and told all they could in regard to the surface as exhibited by the moulding. The class was led to see that there were three kinds of surface. The terms "prairie" and "staked plains" were given, and the reason for the name "staked plains." There was a drill on the surface as follows: One child found a lowland on the map, another the same on the moulding; one a prairie on the map, another the same on

the moulding. Some found and traced the three kinds of surface, while others found the same upon the moulded State. The Guadaloupe Mountains were described from the map and from the moulding, and were drawn in outline upon the board. The class determined the direction and length of rivers by the slope. The important rivers were found on the map, traced in the moulding, and drawn upon the board. Pupils described rivers from the map and moulding with closed eyes.

SOIL.—*Teacher:* You remember the pictures shown you of the swamps of Louisiana; what kind of soil did you find there?

Class: Rich soil.

Teacher (passing to Texas soil, *near Louisiana*): what kind of soil do you think there is here?

Class determine that it is rich.

They were then led to infer the kind of soil on the prairie by being told that wheat grows there; and that of the "staked plains" by being told that cactuses grow there. "How many of you have cactuses at home?" the teacher asked. By asking a few questions as to the care of these, she prepared a basis for an inference as to the humidity of the climate of the "staked plains."

By their knowledge of the climate of Louisiana, the climate of the swamps and low portions of Texas was developed. The class was led to infer that the prairies are not as moist as the swamps, and that in these parts of the State the climate is warm and healthful. From what had been said about the cactuses, they were led to infer that the climate of the plains is dry and hot. The pupils then traced on the moulding

the parts of the State that are healthful, moist, very moist, dry, etc. Teacher pointed to various parts; children told the climate of those parts. Teacher asked, "In what direction must one go to find the climate more moist?—to find it drier?—to find it unhealthful?" One pupil was asked to recount all that had been said about the climate. Another supplied what was omitted.

PRODUCTIONS.—The class was led to infer that nearly the same productions would be found in the swampy regions of Texas as in the same portions of Louisiana. One named the productions, while another placed the articles in the proper localities. Pictures of trees, sugar-cane, etc., were shown. In the same way the productions of the prairies and staked plains were taken up. Pictures of the cactus, aloe, and century-plant were shown. There were small pictures of Texan ponies, cattle, and sheep, which the pupils placed on the moulding in the proper places. The lesson ended with productions. At the next lesson a rapid review would be taken.

It can readily be seen that occupations would be inferred from the statement of productions. While the lesson was going forward all new matter was written upon the board under appropriate headings, as Rivers, Productions, etc.

Mark in the lesson the use of *wall-map*, *blackboard*, *moulding*,—how the true relative importance of each is carefully observed.

Production Map.—In many schools there are no opportunities for teaching the productions of a country by placing these upon the moulded country. A sub-

stitute for this may be arranged in this way: Upon a large sheet of manila-paper let the pupils draw an outline of the country the class is studying. An outline in blue color with water-lines around is quite effective. Paste upon the map the products of the country in their proper localities. Rice, logwood, tobacco-leaf, wheat, oats, gold and silver leaf, cotton, wool,—in fact, nearly every product can be easily fastened to the paper with a little glue. Pupils will gladly bring all the products if asked to do so. The production map can be used to give variety and freshness to the subject in schools that use the moulding-board.

Zigzag Journeys.—For special work in geography give topics such as the following: Make a zigzag journey from New York to St. Louis, stopping at five cities, and spending one day in each. Have the pupils tell what could be seen in each. In order to do this, they are obliged to read up on these cities. Other topics of this sort will suggest themselves.

Tracing.—It adds interest and forms a new way of impressing the facts of geography to let pupils trace in the air with the finger the general direction of rivers and mountain chains, the outlines of continents, lakes, etc., and at each new position of the finger tell what portion of country or what city is to be found there.

A Guessing Exercise.—An occasional exercise like the following will stimulate interest and add enjoyment to the geography hour. The teacher, or a member of the class, having in mind a city, begins to locate it according to the model herewith given. As

soon as any one thinks he is able to name the city correctly, let him raise his hand and state what city he thinks it is. The pupils may prepare at their seats papers similar to the model. Supposing the city in mind to be Liverpool, the paper would read: The city I am thinking of is north of the Equator, west of the Ural Mountains. It is on an island. It is a city of Great Britain. It is near the mouth of a river. It is a great commercial city. It is south of the Cheviot Hills. Steamships make it the end of their route. It is noted for its docks.

Peninsulas, rivers, capes, lakes, seas, mountains, volcanoes, islands, states, even countries, can be used in this way.

Geography a Means of Culture.—Geography may be made a means of broadening the mind by studying the subject, as far as possible, as one would in making an actual trip through the different countries. In order to do this, the teacher must make himself familiar, by outside reading, with the appearance of the country, its inhabitants, social manners, government, educational advancement, customs, traditions, early history, etc. The more vividly and interestingly these subjects are brought before the pupils, the greater will be their interest in what is presented, and the firmer their remembrance of it. We give herewith a list of topics which may be brought up in connection with the study of any country:

1. Name of country.
2. Relative size as compared with some one of the United States, which may be taken as a standard.

3. Position.
4. People. { Customs, manners, social life, traditions, education, early history, appearance, vigor, form of government, etc.
5. Climate. Under this head mention the cause of the climate, and how affected by position and surface.
6. Mountains.
7. Lakes and rivers.
8. Productions. { (*a*) Mineral. If gold or silver is found, give a description of the way in which these are mined. Likewise of lead, salt, diamonds, copper, etc.
(*b*) Vegetable.
(*c*) Animals. Show pictures of all these, if possible.

Bring out the surface of the country by the moulding-table. If the school is supplied with encyclopædias, urge pupils to read all that is given on the several topics. If the school is not provided with encyclopædias, get up some sort of a literary entertainment, and purchase one of the numerous sets that are now sold at low rates. It will be a source of great profit and entertainment to the pupils.

Suggestive Model for an Examination in Geography.—In making a voyage from London to Rome, what countries would you pass? What large cities near the coast? What large rivers flow into the waters along your course?

Mention the cities of Europe that are near mountain-ranges.

Through what States would a line drawn from New

York City to Chicago pass? What large cities would be near this line? Mention the rivers which the line would cross.

Describe the water-shed of the Mississippi and the rivers which drain it.

Why is the climate of Oregon warmer than that of Minnesota?

What waters wash the shores of North America?

Mention the largest rivers of Europe, Asia, Africa, North and South America.

Describe a journey from your present position, selecting your own destination.

Why is the Great Salt Lake salt, and Lake Erie fresh?

CHAPTER III.

SPELLING.

Phrase-spelling——A Pupil's Spelling-book——Avoid Contrasting a Misspelled Word with the Correct Form——Have Spelling Lessons Written——Idea as Necessary as Form——A Test outside the Spelling-book——A Suggestion ——Sketches of Objects for Use in Spelling——Division of Work——Two Classes of Words——Spelling and Pronunciation by Copying——Accuracy in Spelling——An Occasional Drill in Spelling——Difficult or Perplexing Words.

Phrase-spelling.—Let there be occasional exercises in phrase-spelling by the classes in Physics, Physiology, History of the United States, Civil Government, Rhetoric, and other subjects, as many of the words used in such studies are not often found in the usual spelling lessons. Let the class go to the boards, and each one write his name at the top of the space allotted to his use. The teacher may then select from the text-book phrases, words, and sentences, reading one of these to each pupil at the board. Continue around the class till each one has written several.

After these have been written, let the class take seats and criticise the spelling. A part of a paragraph from Higginson's "History of the United States" is reproduced here to show more clearly the plan.

"During this time of delay a committee had

been appointed to draw up a declaration of independence, to be used if necessary. . . . The Declaration was written by Thomas Jefferson, though a few verbal changes were made by Adams and Franklin, which may still be seen, in their hand-writing, on the original document. There was a long discussion in the Congress, and the Declaration was debated and criticised, word by word, and sometimes very severely attacked. During this attack John Adams was its chief defender; while Jefferson, who had written it, did not say a word." In this extract the first pupil could be directed to write the sentence, "A committee had been appointed;" another, "To draw up a declaration of independence." To others could be assigned, "If necessary," "The Declaration was written by Thomas Jefferson," "A few verbal changes were made by Adams and Franklin," "The original document," "There was a long discussion in Congress," "The Declaration was debated and criticised," "Sometimes very severely attacked," "John Adams was its chief defender."

A Pupil's Spelling-book.—It may be found advisible to allow students in spelling to make a spelling-book of the words they acquire from each lesson. Ten minutes may be taken each day in which to write these words in a blank-book,—each one writing the words which he has learned. The words should be written in a column, and the meaning of each may be placed opposite it.

Avoid Contrasting a Misspelled Word with the Correct Form.—A misspelled word should never

be written on the board, even to show that it is wrong. The tendency will be to confuse the pupil, and cause him to forget which is the correct and which is the incorrect way to spell the word.

Have Spelling Lessons Written.—Spelling lessons should be *written*, as far as practicable. The advantage of this is that the pupil learns to spell the words as he will use them. The words should be given out slowly, else in his hurry the pupil will form a habit of bad writing, and so lose in one branch while he gains in another. A special effort should be made to create a pride in having neatly written exercises.

Idea as Necessary as Form.—It is important that the pupil know the meaning of the word spelled. The *form* can make but little impression on his mind, if he does not associate with it the meaning conveyed.

A Test outside the Spelling-book.—Lay aside for a day the monotonous spelling-book, which contains a large percentage of words with which the pupil's mind should not be burdened, and try an exercise like the following:

Let the pupils take their slates and write their own names in full.

Write the teacher's surname.

Write the name of the county in which they live.

Tell where Scotchmen come from.

Tell how old a boy is who was born in 1879.

Write the names of four winter amusements, of four summer amusements.

Tell how many days in this month.
Mention what we plant to get potatoes.
Give a definition of a druggist.
Name six pieces of furniture.
Name six kinds of tools.
Write the names of the seven days.
Name the year, month, and the day of the month.
Write a verse from memory.

A Suggestion.—A child learns best how to spell a word when he wishes to use it, and the wise teacher will constantly create that want. When a word is written in black or white, it stamps itself much more firmly upon the mind than when merely committed to memory. In writing, the hand forms the word, and the child will long remember just *how* he formed it, and its appearance on the board or slate.

Sketches of Objects for Use in Spelling.—In primary spelling work, the teacher may make rough sketches of different objects on the board, and ask the class to write the names of these upon their slates. If any do not know the spelling of a particular word, write it on the board. After this the pupils may be asked to tell what they can about these objects, and a short description of each may be written on the board and copied on the slates. The sketches may be of a number of objects that are connected, and about which a short story can be made. This will give the class practice in invention. It will not take much skill on the part of the teacher to make these sketches, even if his knowledge of drawing is limited.

Division of Work.—A certain teacher uses this plan with his spelling class. The pupils are sent to the board and divided into two divisions, one of which writes the words upon the board and the other the definitions. At the next recitation the order may be reversed. Those writing definitions receive a drill in composition, as they use their own language in giving the meanings of the words.

To prevent copying at the boards, divide the class into three divisions, and give each division a word in turn; mingle the divisions, so that no two pupils having the same word shall stand side by side.

Two Classes of Words.—The spelling-book should not be used to the exclusion of all other sources. Two classes of words should be recognized,—those whose meaning is familiar through daily use, and those partially familiar because frequently heard. Others may be left until the pupil comes to them in his widening sphere of reading. The spelling of the first class of words may be taught either in the form of sentences or disconnectedly. The second should only be brought up in connection with sentence-making.

Spelling and Punctuation by Copying.—The classes in the first and second reader may copy all their reading lessons. By this means they will gradually become familiar with the spelling of words commonly used, as well as the use of marks of punctuation. When the second class has finished the first half of the book, a spelling lesson may be assigned from words found in each day's lesson. In correcting work it will be found advantageous, both to the teacher and

pupils, for the slips to be exchanged and the errors noted by the pupils themselves. From the fact that they are correcting one another's work, they will look more carefully for mistakes and pay more marked attention to their correction.

Accuracy in Spelling.—Teach pupils that they must never write a word when they are uncertain of the way in which it should be spelled. Have a dictionary in the school-room and encourage pupils to consult it constantly—not only for the spelling and pronunciation of words, but also for their meaning.

An Occasional Drill in Spelling.—Take a little time once a month or more frequently, in which to drill on lists of words such as the following. Repeat each list until the pupils are thoroughly familiar with them:

Poniard.	Privilege.	Judgment.
Separate.	Ethereal.	Knowledge.
Business.	Ecstasy.	Rhetoric.
Scintillate.	Excellent.	Surgeon.
Allege.	Supersede.	Ancient
Exhilarate.	Ventilate.	Autumn.
Mignonette.	Alcohol.	Dairy.
Neutral.	Brilliant.	Health.
Isthmus.	Marriage.	Oyster.

Difficult or Perplexing Words.—The following words are introduced to show devices by which the spelling of many words may be remembered:

Committee. The spelling will be easily remembered from its having three double letters.

Mediterranean.	Double-*r*, because derived from *terra*, meaning earth.
Aqueduct.	*Aq*, not *acq*, because from *aqua*, meaning water.
Bilious.	One *l*, because connected with bile.
Receive. Perceive. Conceive.	When *e* and *i* occur as diphthongs in a word, *e* comes before the *i* if the diphthong is preceded by *c;* otherwise the *i* precedes *e.*
Retrieve. Relieve. Achieve.	
Secretary.	*e* after the r because formed from *secret.*

CHAPTER IV.

READING.

Suggestions on Reading——A Primary Reading Lesson——Teaching Time of Day——Device for Teaching a New Word——Suggesting for Words——Other Points on Reading——To Create Sentiment against Poor Reading——Drill for Expression——To Drill upon Words often Mispronounced——Pronunciation of Words Alike in Form but Differing in Accent.

Suggestions on Reading.—In the first place, do not make the lessons long—do a little, and do that thoroughly. Insist that the reading shall be natural,—as the pupil would talk were he telling the same thing to another. Occasionally read over the lesson to the class, and give such expression as shall bring out the full meaning. Show the class by individual paragraphs how the meaning is brought out more clearly in this way. Let all new words be defined before the reading begins. The scholar cannot read properly if he does not know the meaning of some of the words. These new words may be written out on the board with the meaning of each. After their meaning has been learned, have members of the class make up sentences with these words in them; this will fix the meaning in their minds. Call on some one in the

class to give the chief points in the preceding lesson, or let the whole class write a review of it. Ask some one to read a sentence in the lesson, then with closed book tell clearly and fully what he has just read. Full answers should be required, that the habit of thoroughness may be cultivated. Do not correct mispronunciation while the pupil is reading. You will thus destroy the sense of his reading.

A Primary Reading Lesson.—The following is essentially an object lesson to be given to little people just learning to read:

It is best that there be not more than eight or ten in the class. If there are more who are to begin reading, divide the whole number into two or more divisions. Take some familiar object, as a box. Talk a few moments about the box, holding it so that all can see it. Then draw an outline picture of it upon the board and write under it the word box, telling the class that this word b-o-x is the name of the object you are holding. When pupils have become familiar with the appearance of the word and its spelling, show them that the object has been expressed in three ways,—by the box you are holding, by the picture, and by the *word*. They will then get the notion that a word is a sign of an idea. Next take a book, and follow the same plan. When the two words are written on the board, point in turn to each till the class becomes familiar with the objects as expressed in the word. Place the box on the book and ask, "Where is the box?" *On the book.* As the class give this answer, write the word *on* between the words already on the board, and the class will be able to read and understand the sen-

tence, "A box on a book." Add other words to the sentence in the same way, and let the children copy the words and the pictures on their slates.

Teaching Time of Day.—A little time can be taken at the close of the reading lessons for this purpose. Make a clock-dial out of pasteboard and pieces of tin, or, what is better, procure an old clock; then practise telling the exact hours—that is, minute hand at twelve, while the hour hand is changed from hour to hour. Next, let hour hand remain at twelve, and drill upon the time past the hour; as, five, ten, or fifteen minutes past to half past. Then would come five, ten, fifteen, etc., minutes to half past the other hours. Last, teach to tell the number of minutes to any given hour.

Device for Teaching a New Word.—(*a*) Select some sentence containing the word, and write this upon the blackboard. Indicate the correct pronunciation of the word by diacritic marks, then have the class read the sentence.

(*b*) Question about the letters in the word. What letters are silent? What letters are not silent? Are there any letters doubled?

(*c*) Let the class copy the word in other sentences, the teacher taking care that the word is correctly used.

(*d*) Drill upon writing the word in dictated sentences until class know its form thoroughly.

Suggesting for Words.—An excellent plan to prepare pupils for a new reading lesson is to select the

new words and suggest for them. Below we give a part of a reading lesson from one of the school readers, and a list of words new or unfamiliar to the pupils on taking up the lesson. After the list of words, are the suggestions for them. The words are written upon the board as soon as got from the pupils, and drill is put upon these words before beginning to read the lesson.

Only a Few Drops.

"The most interesting event of our family history during my tenth year was the purchase of a cow. My father had a patch of land about a mile from our house, and he thought that the best use he could turn it to would be to pasture a cow. How many comforts and little luxuries that cow provided us with!—milk, and butter, and sometimes even a cheese. Next to Cuff, our faithful house dog, the cow became the pet of the family.

2. "And who is going to drive the cow to pasture, father?" I asked, as he put her into the yard on the first evening after her arrival. "You, Robert," he replied; and his answer gave me no little sense of my own importance. Here I was with a charge laid on me,—an important duty which I was to discharge every day, and which for some time I did discharge with pleasure and alacrity."

Interesting	Discharge
Inquiries	Arrival
Alacrity	Event
Purchase	Importance

Harry's mother held two letters in her hand. She read one carelessly, and then cast it aside; but as she read the other one, her eyes brightened and she looked pleased. What kind of a letter was the second one? Interesting. It told her that her sister and two boys

were coming to visit her. Harry's mother went to the kitchen to prepare for the visit. Name a few articles you think she cooked. Can we live without cake, pies, and puddings? Why do we eat them? What do we call unnecessary articles that we like? Luxuries.

Mrs. Howe, Harry's mother, wanted a number of articles from the cellar, for which she sent Harry. How do you think he obeyed? Because he obeyed quickly, with what did he obey? Quickness, or alacrity.

She found there were not enough raisins in the house. What do you think Harry had to do? Go to the store to buy some. What word means buy? Purchase.

Harry lived on a farm and had duties to perform each day; so when he asked his father if he might go to the train to meet his cousins, what do you think his father said? What word means done, or finished? Discharged.

The next afternoon, if you had been near the station, you would have seen Harry. What was he doing there? Waiting for his cousins. To do what? What word means come? Arrive. Because he was waiting for them to arrive, we say he was waiting for their ——? Arrival.

The visitors stayed a month. They went riding, boating, and on picnics; and all had a very good time. . . .

Why do people read histories and books about the olden times? What one word means things that happen? Events.

Do these books give all the events of those times? Which ones? The most important. Instead of say-

ing, they are important events, we may say, they are events of importance.

Other Points on Reading.—1. Insist that the lesson shall be read by each pupil as he would talk if he were *saying* the same thing.

2. Take a few moments at the close of each lesson to make plain that which might prove to be an obstacle in the advance lesson. From time to time read over the advance lesson to the class, using the proper expression.

3. By questions and answers, make plain all new words. Form new sentences, using these words.

4. Let class criticise as each pupil pronounces. Teacher notes mispronounced words not noticed by the class, and requires them to be corrected for the next lesson.

5. Let a part of each lesson be written on the board or upon slates. Give a list of words which are to be used in original sentences, and insist that these sentences be well written, and that they have some meaning.

6. Let the review lesson be read each day. Do not call upon pupils in any set order, but promiscuously. Question thoroughly as to the *meaning* of the sentences read. If the sentence reads as follows: "Charles and Henry went to the meadow beyond the wood, this morning, to pick strawberries," do not ask such questions as, "What did Charles and Henry do? For what purpose did they go to the meadow? Where is the meadow?" etc.; but ask for *all* the ideas contained in the sentence. That the pupils may be able to do this, begin with short sentences, and proceed to those

longer and more involved, as the pupils acquire readiness in seizing the whole thought.

7. Before reading the advanced lesson the pupil should be able to pronounce all of the words, and also understand the thought conveyed in each sentence. He will then be able to read with expression. Do not correct a pupil while reading, unless he mispronounces, or reads with such expression as to lose the meaning of the text.

8. Have occasional exercises in reading at sight.

9. Occasionally read a short poem, and show the class how language may gain force and beauty from its poetic form.

10. If your pupils are of sufficient age, have selections read from the newspapers, and explained. Let all the places in these selections be fixed, geographically, by looking them up on the map.

11. It is better to have the idea of the sentence brought out with the proper expression, and to correct mispronunciation afterwards. Read short stories or bits of travel or history to the class, and ask pupils to repeat them, giving all the ideas. Do not follow any one plan continuously, but give variety to your work from day to day.

To Create Sentiment against Poor Reading.—For advanced classes select something not previously read; for instance, "The Legend of Sleepy Hollow." Have but one copy, and ask each member of the class to read a portion. The interest of the class in the story, and the unwillingness to lose any part of it, will secure expressive and distinct reading.

Drill for Expression.—Copy upon the board some short extract which the class has not seen, and call upon pupils, one by one, to read it. Let there be no criticism till all have read.

For Drill upon Words often Mispronounced.—Take as many of the following words as you deem best for one exercise, write them upon the board, and in an opposite column write the correct pronunciation. Allow sufficient time for each pupil to become acquainted with the proper pronunciation—a half-day at least—after which erase the column giving the pronunciation, and test the pupil's ability to pronounce correctly each word of the list:

Used.	Exquisite.	Gallows.
Dishonest.	Itinerant.	Finance.
Museum.	Jugular.	Mischievous.
Lyceum.	Sagacious.	Suffice.
Precedent.	Carmine.	Khedive.
Allopathic.	Impetus.	Condolence.
Homœopathic.	Architect.	Leisure.
Allopathy.	Bitumen.	Extant.
Homœopathy.	Condemning.	Precedence.
Soughing.	Enervate.	Fatigue.
Obligatory.	Process.	Bronchitis.
Combatant.	Juliet.	Stolid.
Indisputable.	Greasy.	Telegraphy.
Apparatus.	Interesting.	Photography.
Covetous.	Allies.	Carbine.
Iodine.	Quinine.	Bombast.
Bromine.	Vehement.	Inquiry.
Prelude.	Aggrandize.	Albumen.

Italian.	Patron.	Confidant.
Sacrifice.	Pall Mall.	Mirage.
Bade.	Abdomen.	Livelong.
Acclimated.	Franchise.	Nasal.
Extol.	Association.	Arab.
Franchise.	Pronunciation.	Pleiades.
Lamentable.	Cognomen.	
Exemplary.	Bellows.	

Pronunciation of Words Alike in Form but Differing in Accent.—Let pupils write sentences, using the words given below, first as nouns, then as verbs, and then read the sentences written, pronouncing the noun or verb, as the case may be, correctly:

Nouns.	Verbs.
Sur'vey,	Survey'.
Per'fume,	Perfume'.
Ac'cent,	Accent'.
Proj'ect,	Project'.
Des'ert,	Desert'.
Reb'el,	Rebel'.
O'verthrow,	Overthrow'.
Ab'stract,	Abstract'.
Con'vert,	Convert'.
Per'mit,	Permit'.
Ex'port,	Export'.
Sus'pect,	Suspect'.
Con'tract,	Contract'.
Pro'test,	Protest'.

A similar plan can be used with those words in which the accent of the adjective differs from the verb. Then, those forms in which the accent of the noun and the verb are the same should not be overlooked.

CHAPTER V.

ARITHMETIC.

Begin Number with Objects——Principles First——A Simple Piece of Apparatus for Teaching Primary Number——Scheme for Teaching the First Three Orders of Units——Numeration——Device for Drill with Decades——Counting by 2's, 3's, etc.——For Oral Practice in Adding and Subtracting——Borrowing One from the Next Column——A Form of Drill by Diagrams——Rapid Addition——For Busy Teachers——Device for Detecting Incorrect Answers in Addition——Device for Teaching Multiplication——Drill in Rapid Adding, Subtracting, Multiplying, and Dividing——Teach Long Division before Short Division——Of Value in Greatest Common Divisor and Least Common Multiple.——Teach Beginners Fractions by Using Dollars and Cents——Diagram for Teaching Fractions——Chart for Teaching Fractions——Multiplication of Fractions——Incorrect Reading of Certain Fractions——An Aid in Learning to Read Decimals——Development Lesson in Multiplication of Decimals——Oral Drill in Compound Numbers——Drill for Percentage——Give frequently Examples in Words instead of Figures——Aids in Interest——Number of the Month——Form for Partial Payments——To Insure Thorough Understanding of Cube Root.

Begin Number with Objects.—A child's first instruction in arithmetic should be by means of objects. At this period the concrete is more real to him, and easier to comprehend, than the abstract. To give him

an idea of number, use objects. He will understand more readily what *five* means, if five apples are placed before him, than by simply saying "Five." By means of objects, addition and subtraction will be comprehended with but little effort. A frame with small balls upon wires is convenient, but not necessary, as books, pencils, pens, etc., will convey the idea of number equally well.

Principles First.—In teaching arithmetic, or in fact any branch, do not place too much importance upon an exact memorizing of the rules. Let *principles* be sought, and rules deduced from these. Encourage pupils to invent rules of their own, which will serve the same purpose as those given in the book. Make an effort to secure original investigation by members of the class.

There should be no reference to the answer while a pupil is working an example; therefore, after a question is stated upon the board, let the books be laid aside.

Read ch. x., Fitch's "Lectures on Teaching.

A Simple Piece of Apparatus for Teaching Primary Number.—Have a wire stretched behind the desk and on it string spools. Teach counting by 2's, 3's, 4's, etc. Subtraction-tables can be built up by using the spools, and also the lower tables of multiplication.

Scheme for Teaching the First Three Orders of Units.—FIRST STEP. As a basis, children should have been taught numbers from one to ten objectively, and should be able to count to a hundred.

Let the teacher write the figures 1, 2, 3, 4, 5, 6, 7, 8, 9 on the blackboard in a column, and ask children to read each figure, naming some object after it; for instance, 1 chair, 2 desks, 3 pencils, 4 erasers, etc. When the child sees clearly that 2 desks means two objects of the same kind, and 3 pencils three objects of the same kind, the teacher may ask how many *ones* there are in 2, in 3, in 4, etc. When the pupil comprehends that 4 ones are meant by 4, and five ones by 5, etc., the teacher will tell the child that instead of saying that there are two ones in 2, we may use a word which means the same as one, and say there are two units in two. Then let the teacher question as follows: How many units in this number? (pointing to 3.) How many in this? (pointing to 4, and so on to each.) Some one show me a number that has as many units in it as I hold up fingers (holding up, two, three, five, eight, etc., fingers).

What does unit mean?

Ans. One.

What is a unit?

Ans. A one.

Yes, or we may say, "A unit is one, or a single thing."

You may tell me what a unit is?

Ans. A unit is one, or a single thing.

Now, class, give me close attention before going to seats, as I have a hard question for you, and I want every little boy and girl to hold up his hand ready to answer my question.

What is the largest number of units that can be written down or expressed by one figure?

Ans. Nine units.

Let the above be regarded as the first step in the scheme. It will probably take several days to cover this first step, as there should be a great deal of drill upon each point, and a review of the previous day's lesson, before taking up anything in advance.

SECOND STEP.—For the next step the teacher has several bundles of splints, each bundle containing ten splints. If the teacher is unable to obtain splints, small straight twigs of uniform size may be cut and tied up in bundles. The teacher now passes bundles to several children, asking how many units there are in each bundle.

Ans. Ten units.

Now, instead of saying here are ten units, we may say of this bundle that it is 1 ten. (This point is an arbitrary one, and the most direct and logical way is to tell it at once to the class.)

The teacher now gives a different number of bundles to different children, and asks:

What have you?

Ans. Two bundles.

What may you say instead of bundles?

Ans. Tens.

What have you? tell me again.

Ans. I have 2 tens.

The teacher drills in this way with the others who were given bundles.

Teacher (holding up one bundle). What is here?

Ans. 1 ten.

How many units?

Ans. 10 units.

Who can write 1 ten on the board in figures?

(Holding up two bundles.) What do I hold up?

Ans. 2 tens.

How many units?

Ans. 20 units.

You may write 2 tens upon the board.

The teacher continues in this way till 9 tens is reached.

The teacher now holds 2 bundles in one hand and three units in the other, and, asking what is in each hand, then puts the bundles and splints in one hand, asking, What is here?

Ans. 2 tens and 3 units.

Or how many units?

Ans. 23 units.

Please write it upon the board.

Now, holding up bundles and units in different combinations, children are asked to write upon the board the number of tens and units. Continue in a similar manner till children are thoroughly familiar with numbers to 99.

THIRD STEP.—Begin this step by review of foregoing matter in some such way as, Who can write upon the board a number containing tens and units? Read the figure which tells the number of units. The figure which tells the number of tens.

The teacher will now have ready several large bundles containing ten of the smaller bundles. Handing one of them to a child,

How many tens have you in your bundle?

Ans. 10 tens.

How many units are there in 10 tens?

Ans. 100 units.

Who can write 100 units on the board?

Taking another bundle, the teacher asks, How many units in this bundle?

Ans. 100 units.

(Putting the two bundles together.) How many units in these?

Ans. 200 units.

Who can write 200 units on the board?

Same for 300 units. And now, if children have been thoroughly taught, such abstract questions as, "Who can write 400 units on the board? 500 units?" etc., may be asked.

The rather difficult point of leading children to recognize the number of tens in 100 units, 200 units, etc., now follows. But if the bundles of 100 each, and the numbers 100, 200, etc., are used in close relation, the difficulty is easily overcome.

Let the teacher now put in one pile on the desk 1 bundle of 100 units (10 bundles of ten each), 2 bundles of ten each, and five splints, and then ask class how many units there are on the table. See that pupils recognize there are 1 hundred, 2 tens, and 5 units.

Who can write a number on the board that shall express as many splints as are here on the table?

Child writes 125.

Teacher now points to the large bundle, asking child to show what figure of the number on the board means so many. Pointing to the 2 bundles of 10 each, teacher asks for the figure that represents these; then for the figure that represents these (the five single splints).

Drill with other numbers, as 156, 224, etc.

Point to the place in which we find units written.

Pupil points to the first place.

In what place do we find the tens?

Ans. In the second place.

Where, thinking of the units?

Here the child will likely say next to the units, and must be led to see that he should say to the left of units.

In what place is the hundreds written?

Ans. In the third place.

Where, thinking of the tens?

Ans. To the left.

Who can tell me what is written in each place?

Ans. Units is written in first place, etc.

Who can tell where units, tens, and hundreds are written?

Ans. Units is written in the first place, tens is written in the second place, or to the left of units, and hundreds is written in the third place, or to the left of tens.

The teacher should be in no hurry to get to thousands. Let there be drill upon the above again and again, varying as much as possible, so that the whole knowledge in these steps sinks deep into the child's mind, and is thoroughly assimilated. When that time comes, little trouble will be found in teaching what remains of Numeration.

Numeration.—When a pupil is able to read any number composed of three figures, there is nothing to hinder his taking up numbers of two, three, or more periods. Let the teacher write on the board a number like the following, being careful to separate the periods

a little more than would be necessary afterward: 167, 286, 534. Now, put a book over any two of the groups, and let the scholar read the figures of the uncovered group. The teacher may now state that when numbers have more than three figures, they are divided into groups of three figures each, beginning at the right hand. The name given to the second group is thousands (teacher writes *thousands* obliquely above that period); the name given to the third group is millions (teacher writes *millions* above that group). Let the teacher next place a book over the first and second periods, and direct the pupil to read what is uncovered, and call the name of the group as soon as he reads the number. Moving the book along, the pupil is asked to read the second period and call the name above it. Then pass to the units period. Practise now without the book. Next take numbers like these: 26,445, 4,262,676, 54,443,666. When able to read these without the name of the period written above, pass to numbers of four periods. It will be seen that when the pupil is ready to take the fourth period, nothing is necessary except to give him the name of that period.

While learning to read, some numbers should be given him to write.

Device for Drill with Decades.—Write upon a sheet of manila-paper, with a small camel's-hair brush and common writing-ink, the numbers from 0 to 109 in the following order:

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99
100	101	102	103	104	105	106	107	108	109

This table can be made the basis of much useful drill in classes of different grades. It is intended that the work shall be oral. Let 1 be added to the numbers of each decade; as, 1 and 0 are 1, 1 and 10 are 11, 1 and 20 are 21, and so on through the first decade. In like manner, add 1 to all the other decades. Then add 2, then 3, and all the numbers to 9, to each decade. In reciting, give to each pupil a decade.

When in adding 2, the 9th decade is reached, viz., adding 2 to 8, the class may be asked what right-hand figure is given when 2 is added to 8. They reply, "Naught or zero." Here there is an inference for them that 2 and 8 give 0 as a right-hand figure. So 2 and 9 give 1 as a right-hand figure. Then 3 and 7 give 0, 3 and 8 give 1, 3 and 9 give 2, as right-hand figures. The plan can now be readily seen.

The value of the drill is the facility it gives in adding. Many persons who find no difficulty in telling instantly that 17 and 6 are 23, or that 18 and 7 are 25, have to halt a little and think twice to be sure that 77 and 6 are 83, or that 68 and 7 are 75. Now a pupil, in

the drill here suggested, goes through, in the decade of 7 and 6, the following: 7 and 6 are 13, 17 and 6 are 23, 27 and 6 are 33, 37 and 6 are 43, 47 and 6 are 53, 57 and 6 are 63, 67 and 6 are 73, 77 and 6 are 83, 87 and 6 are 93, 97 and 6 are 103, 107 and 6 are 113. In doing this, he learns so thoroughly that 7 and 6 in all combinations gives 3 as a right-hand figure, that when he adds a column of figures he will not hesitate and falter in his work when the sum progresses through the forties, fifties, sixties, etc.

The decades can then be taken in reverse order, adding any number less than 10 to the 10th decade first, then to the 9th, and so on.

It is only requisite to say that the use of the decadal table in subtraction is as necessary and varied as it is in addition.

Counting by 2's, 3's, etc.—Variety of drill in addition is often secured by asking pupils to start with some number and count by 2's, 3's, etc. For instance, the child takes 1 as a basis, and counts by 2's as follows: 1, 3, 5, 7, 9, 11, etc. Then starting from 2, he gives 2, 4, 6, 8, 10, etc., carrying the counting as far as the teacher deems best, which ought sometimes, in the case of larger numbers, to go to 100.

It will be seen that all the numbers below the one by which the counting is done are taken as a basis in order to make all the combinations. In counting by 5's, we should have 1, 2, 3, 4, and 5, each as a starting-point.

The above device, as will be readily recognized, is substantially the same as the Decades given else-

where, except that in the Decades the pupil is aided by what the eye sees upon the chart.

For Oral Practice in Adding and Subtracting 3, 7, 11.—Take the number 3, add it to 1, and successively to the sums up to 50. Thus, 1, 4, 7, 10, 13, etc. So with sevens: 1, 8, 15, 22, etc.

Then take some large number, as 70 or 100, and go rapidly backwards, taking away three every time, or seven, or eleven.

Borrowing One from the Next Column.—Primary scholars frequently find it difficult to understand the reason of "borrowing one from the next column" in subtracting one number from another. The illustration given below will enable the teacher to make it clear to them. Suppose it is required to subtract 125 from 412. Have a number of one-dollar bills, ten-cent pieces, and pennies. Tell the class that the pennies will be called units, the ten-cent pieces tens, and the one-dollar bills hundreds. The question then becomes this: from four bills, one ten-cent piece, and two pennies take one bill, two ten-cent pieces, and five pennies. Ask the one having the four bills, one ten-cent piece, and two pennies to give you five pennies. As that will be found impossible, exchange the ten-cent piece for ten pennies. The pupil will then have twelve, and on giving the five will see that seven are left. Then ask for two ten-cent pieces, and as the pupil will have none, exchange one of the one-dollar bills for ten ten-cent pieces. On giving up two of them, eight will be left. After this ask for one one-dollar bill which, taken from the three bills left, will leave two. The

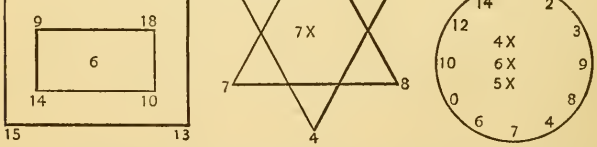
child will thus see that there are left two one-dollar bills, eight ten-cent pieces, and seven pennies, or 287.

ANOTHER PLAN—Write an example on the board in this way:

$$\begin{array}{rrrrrrr} 744 = & 6 & \text{hundreds} + & 13 & \text{tens} + & 14 \\ 367 = & 3 & \text{“} + & 6 & \text{“} + & 7 \\ \hline 377 & 3 & & 7 & & 7 \end{array}$$

Explain that 744 is equivalent to 6 hundred, 13 tens, and 14. In the same way, explain that 367 is equivalent to 3 hundreds, 6 tens, and 7. Next show that 7 cannot be taken from 4, so we borrow one of the tens from the 40. 7 tens cannot be taken from 3 tens, so we borrow 1 hundred, or 10 tens, which, with the 3 tens, makes 13 tens; giving for the whole 6 hundreds, 13 tens, and 14. Follow the same plan with the other number, and complete the subtraction.

A Form of Drill by Diagrams.—Draw upon the board the accompanying diagrams with colored cray-



ons. The teacher may point to different numbers, and the pupil states the result, having used the number in the centre of the diagram by adding, subtracting, or

multiplying as previously directed. The centre number is changed as soon as the combination becomes familiar. As seat-work, the pupil may be directed to begin with some figure and write upon his slate the results, going round the diagram towards the right or the left. If there is danger of copying from each other, one line of pupils can be directed to go round to the right, and another to the left.

Rapid Addition.—Special prominence should be given to the combinations of numbers that form ten; as, 9 and 1, 8 and 2, 7 and 3, 6 and 4, etc. Again, the pupil should be taught to combine rapidly small numbers into larger numbers, that when placed together will form ten; as, 1, 2, 4, and 3. The pupil should say simply, seven and three are ten. In adding a column of this sort, 3, 3, 4, 6, 4, 1, 2, 3, 4, 7, 1, 2, the pupil should say "ten, twenty, thirty, forty." Of course ordinary columns will not always be divisible into tens, but the principle holds good—that when the eye can be trained to see large numbers in the combination of small ones as quickly as the individual small numbers can be pronounced, there will be a great saving of time.

For Busy Teachers—Drill in Fundamental Rules.—A teacher can save much time and labor by the use of a chart in the arithmetic class.

Take a wide piece of paper and across the top write the letters of the alphabet. Under these write any numbers that may be desired. If the class is learning to add numbers, all that the teacher need say is, "Add F, D, and G." Or, if the class is in subtraction, multi-

plication, or division, "From L take S," "Multiply H by J," etc.

Fractions can be written instead of whole numbers. Dollars and cents can also be used.

Device for Detecting Incorrect Answers in Addition.—When pupils have added the numbers given, draw a line under the result and direct them to add the numbers again, *including the answer*. If the work is correct, the last result will be double the first. Pupils will thus prove their own work, and the teacher can see at a glance whether the work is correct or not, thus saving much time.

Device for Teaching Multiplication.—Have a number of lines composed of dots or small disks, making the dots or disks of each line with chalk of a different color. To teach the multiplication of two by three, for instance, show that the sign of multiplication (×) means *times*. Direct pupil to point off three yellow dots, then three red dots.—How many in all? How many are three taken twice? How many are two *times* three? Let the work then be written thus: $2 \times 3 = 6$.

Drill in Rapid Adding, Subtracting, Multiplying, and Dividing.—As a general exercise for the whole school, just after the session opens in the morning, or in the three or four minutes that sometimes remain before the time for closing, an example of this sort may be given: Let the pupils take their slates and add to 20 the number 4, subtract 10, multiply by 30, add 80, divide by 5, add 1, multiply by 9, take

away 699. What is left? Of course, the question can be varied in any way, the object being simply to induce rapidity and exactness of work.

If there is not sufficient time for using slates, let the teacher give something like the following, requiring pupils to solve mentally, keeping up with the exercise as stated: Multiply 4 by 6, add 10, add 6, divide by 2, multiply by 5, subtract 9, subtract 8, subtract 3, divide by $\frac{1}{2}$. Raise hands all who have an answer. What is yours? yours? yours? etc. Those who gave 160 gave the correct answer.

Such exercises can be varied, sometimes making them so simple that very young students in arithmetic can follow them, and again so difficult that only the most proficient in school are able to state the correct result.

Teach Long Division before Short Division, as short division is seldom used, and after it is taught, it lessens in no way the difficulty of teaching long division. On the other hand, when a pupil has learned long division, the teacher has but to mention short division, show how an example is worked, and the pupil takes it without putting further time upon it.

In long division, the form is the difficult thing. We give below a series of examples each representing a step. The arbitrary matters about long division must be told. See that the pupil has thorough familiarity with each step before going to the next. To secure this familiarity, the teacher will have to supply other examples similar to each step.

```
2)426(213
  4
  —
  2
  2
  —
  6
  6
  —
  0
```

```
3)693(231
  6
  —
  9
  9
  —
  3
  3
  —
  0
```

```
4)448(112
  4
  —
  4
  4
  —
  8
  8
  —
  0
```

```
4)8084(2021
  8
  —
  0
  0
  —
  8
  8
  —
  4
  4
  —
```

```
2)496(248
  4
  —
  9
  8
  —
  16
  16
  —
```

```
3)6342(2114
  6
  —
  3
  3
  —
  4
  3
  —
  12
  12
  —
```

```
6)672(112
  6
  —
  7
  6
  —
  12
  12
   —
```

```
7)791(113
  7
  —
  9
  7
  —
  21
  21
   —
```

```
8)824(103
  8
  —
  2
  0
  —
  24
  24
   —
```

```
5)905(181
  5
  —
  40
  40
  —
   5
   5
   —
```

```
9)189(21
  18
  —
   9
   9
   —
```

```
9)1890(210
  18
  —
   9
   9
   —
   0
   0
   —
```

```
11)242(22
   22
   --
   22
   22
   —
```

```
11)2420(220
   22
   —
   22
   22
   —
    0
    0
    —
```

```
12)384(32
   36
   --
   24
   24
   --

25)575(23
   50
   --
   75
   75
   --

25)3275(131
   25
   --
   77
   75
   --
   25
   25
   --
```

Do a great deal of work with divisors containing but two figures. A way to pass to divisors of three or more figures will now readily suggest itself.

Of Value in G. C. D. and L. C. M.—Any number is divisible by three, if the sum of its digits is divisible by three.

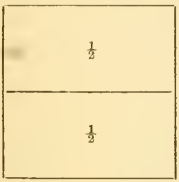
Any number is divisible by four if it end with two or more ciphers, or if the number expressed by its two right hand digits is divisible by four.

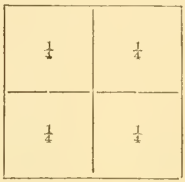
Any number is divisible by eight if the number expressed by its three right-hand figures is divisible by eight.

Any number is divisible by seven, eleven, or thirteen, if the units' period and the thousands' period are the same.

Diagrams for Teaching Fractions.—Probably no portion of the arithemetic gives more trouble to

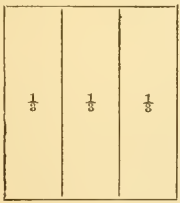
scholars than fractions. This difficulty may be lessened to a considerable extent by the use of diagrams. For instance, addition and subtraction may be taught in this way:

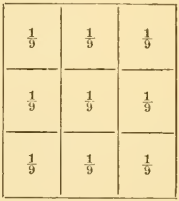




By these diagrams the pupil will at once see that $\frac{1}{4}+\frac{1}{4}=\frac{1}{2}$,—that $\frac{1}{2}+\frac{1}{4}=\frac{3}{4}$,—that $\frac{1}{2}=\frac{2}{4}$,—that $\frac{1}{2}+\frac{1}{4}+\frac{1}{4}=1$. He will readily see that $\frac{1}{2}-\frac{1}{4}=\frac{1}{4}$,—that $1-\frac{3}{4}=\frac{1}{4}$. Other diagrams of a like nature can be easily invented.

In multiplication a figure of this sort may be used:

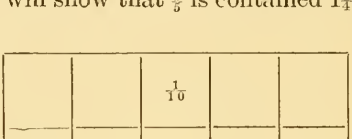




The pupil will readily see that $\frac{1}{3}$ of $\frac{1}{3} = \frac{1}{9}$,—that $\frac{1}{2}$ of $1 = \frac{1}{2}$,—that $\frac{1}{3}$ of $\frac{1}{2} = \frac{1}{6}$.

Other diagrams will readily occur to the teacher.

In division the following figure, divided into fifths and tenths, will show that $\frac{2}{5}$ is contained $1\frac{1}{4}$ times in $\frac{1}{2}$.



The following diagram will show that $\frac{3}{8}$ is contained twice in $\frac{3}{4}$.

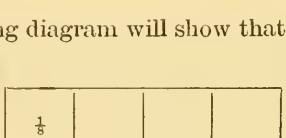
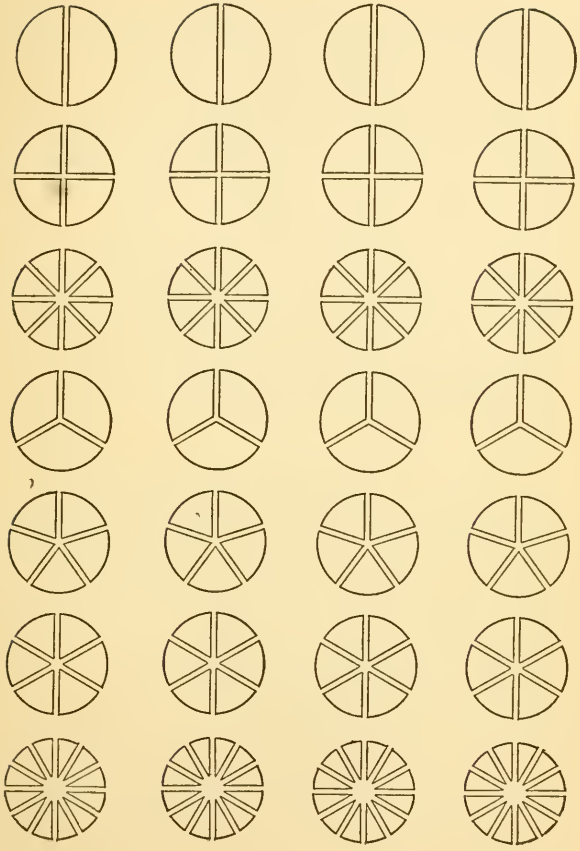


Chart for Teaching Fractions.—Addition and subtraction of fractions can be taught to advantage by taking small circles of different colored papers, and dividing them into halves, quarters, etc. After cutting them into the divisions required, paste them upon a sheet of manilla paper as shown in the diagram. If, for example, the pupil is required to add $\frac{3}{4}$ to $\frac{3}{2}$, by taking circles that are divided into fourths, it will be plain to him that the result is $\frac{3}{2}$, which he will also see is equivalent to $1\frac{1}{2}$.



If it is desired to subtract $\frac{3}{8}$ from a whole number, then by taking a circle which is divided into eighths, the pupil will see at a glance that $\frac{5}{8}$ remain.

Multiplication of Fractions.—Let each of the pupils be provided with narrow slips of paper. Suppose it is required to multiply $\frac{1}{4}$ by $\frac{2}{3}$. Direct the pupils to divide one of these slips into four equal parts. They will then see what is meant by $\frac{1}{4}$. They should then be directed to divide one of these fourths into three equal pieces, and take two of them. The class are then asked how many times they can take two such pieces from the original paper. It will be apparent to them that it would be six times, and that in taking these two pieces out once they take a sixth part of the whole, or that $\frac{2}{3}$ of $\frac{1}{4}$ is $\frac{1}{6}$.

Incorrect Reading of Certain Fractions.—Many teachers and pupils read the fraction $\frac{1}{100}$, *one one-hundredth;* the fraction $\frac{2}{100}$, *two one-hundredths;* and in the same way $\frac{3}{100}$, $\frac{4}{100}$, etc. The incorrectness of this may be shown by writing the fraction $\frac{1}{100}$ twice on the board, and in another place the fraction $\frac{2}{100}$. Pointing to the first two, the teacher may ask, "What are these?" The pupils must logically say "Two one-hundredths." When the teacher points to the other fraction, the class must answer "Two-hundredths."

An Aid in Learning to Read Decimals.—Often a class finds difficulty in remembering the names of the places in decimal notation. Confusion is likely to arise when the number of decimal places is four, five, six, or seven. For instance, the decimal .42606 will

often be read ten-thousandths, instead of hundred-thousandths. The difficulty comes from the pupil being unable to tell at once whether the fifth place is ten-thousandths or hundred-thousandths. A drill upon the following scheme would prevent this. Write this upon the board:

Billionths.	Hundred-millionths.	Ten-millionths.	Millionths.	Hundred-thousandths.	Ten-thousandths.	Thousandths.	Hundredths.	Tenths.
9	8	7	6	5	4	3	2	1

Then ask what is the third place, the sixth place, the ninth place.

The pupil in replying thousandths, millionths, billionths, associates in his mind the order third, sixth, ninth place, with the guiding names, thousandths, millionths, billionths. Let the teacher continue his progress by *threes* through the places of notation, by asking next what the name of the first place is, what the fourth, what the seventh. After this let the scholar discover that the *hundredths*, *hundred-thousandths*, and *hundred-millionths* places are related to the *second* place in progression by three. When the pupil sees these relations, question upon the name of the places by calling their numbers until complete mastery is obtained.

Development Lesson in Multiplication of Decimals.

Teacher. Since we first express, read, add, and sub-

tract decimal fractions as integers, how shall we multiply a decimal fraction by a decimal fraction?

Pupil. As integers.

T. Multiply, then, one hundred twenty-five thousandths by five-tenths.

$$\begin{array}{r} .125 \\ .5 \\ \hline 625 \end{array}$$

T. What have you multiplied?

P. 125.

T. How does 125 compare in value with .125?

P. 125 is one thousand times as great as .125.

T. How, then, does your product compare with the true product?

P. It is one thousand times as great.

T. How do you find the true product?

P. By dividing 625 by 1,000.

T. How do you do this?

P. By pointing off three places from the right of the product.

$$\begin{array}{r} .125 \\ .5 \\ \hline .625 \end{array}$$

T. Do this, and read the result?

P. Six hundred twenty-five thousandths.

T. By what have you multiplied?

P. By 5.

T. By what were you required to multiply?

P. By .5.

T. How does 5 compare in value with .5?

P. 5 is ten times as great as .5.

T. How, then, does the product .625 compare in value with the true product?

P. It is ten times as great.
T. How do you find the true product?
P. By dividing .625 by 10. .125
T. Do this, and read the result. .5
P. Six hundred twenty-five ten thousandths. .0625

Solve several examples in the same way, and then lead the class to infer the rule.

Drill for Percentage.—In order to show how all fractions can be changed into per-cents, draw four perpendicular lines on the board, and in the first column write a common fraction; in the next the same value written as hundredths, and in the last the same as per cent. Thus:

Com. Fraction.	As hundredths.	As per-cents.
$\frac{1}{2}$	50 hundredths	.50
$\frac{1}{3}$	$33\frac{1}{3}$ "	$.33\frac{1}{3}$

Write a number of common fractions and let the pupil fill out the other two columns.

Give Frequently Examples in Words instead of Figures.—In giving original examples, let them frequently be given in words, not figures. The arithmetical questions which arise in actual life are not in the shape of figures, but we translate them into these from our usual form of speech. Therefore, examples given in the form of words are much easier to solve, because more natural.

Aids in Interest.—An easy way to state fractions of a month, provided the number of days is divisible by 3, is by placing them in the form of tenths, thus:

3 days = .1 month; 6 days = .2; 9 days = .3; 12 days = .4; 15 days = .5; 18 days = .6; 21 days = .7; 24 days = .8; 27 days = .9. Two months and eighteen days would be written thus: 2.6 months.

It is worth remembering that from any day of any month to the same day of the following month, there are as many days as in the first-mentioned month.

Number of the Month.—It is necessary for working problems in interest that the pupil be able to tell instantly the number of each month in the year. Too many teachers pass this matter without giving it any attention. A little drill upon the following scheme will make pupils confident of the number, instead of having to count, as many are obliged to do.

Write the abbreviations of the months in order upon the board, numbering them. At once it will be seen that March, the first month of spring, is the third month; that June, the first of the summer months, is the sixth; that September, the first of the autumn months, is the ninth; that December, the first of the winter months, is the twelfth. With these firmly fixed, the number of any other month is told instantly. For instance, May is the fifth month, being immediately before June, the sixth. It is perhaps well to add in this place that it is just as important the pupil should know the number of days in each month. Do not teach that old quatrain "Thirty days hath September," etc., for the pupil will rely upon it at first, and is afterwards never able to get rid of it.

Every one knows the number of days in February. Then all the other months have thirty-one days except four. All, then, that need be done is to drill thor-

oughly that April, June, September, and November are the months having thirty days each.

Form for Partial Payments.—Where a number of payments are given, the whole work will be preserved and the operation made plain to the student if the work is stated as shown below. The dates are all placed one above the other in proper order, with the earliest date at the bottom. Subtract this last date from the next above and place the result below the line. Subtract this last date from the one next above it, and place the number of years, months, etc., below the first number of years and months, and so on for all the dates, connecting each date with its own resulting years, months, and days by a dotted line. At the right may be placed the interest of $1 for the given time, and at the right of the dates may be placed the payments. The annexed work will show what is meant.

1878	10	23		
1876	2	2	$ 25	
1873	4	5	$200	
1872	1	1	$100	
1868	6	5		
3	6	26	214⅓	
1	3	4	075⅔	
2	9	27	169½	
2	8	21	163½	

To Insure Thorough Understanding of Cube Root.—In teaching cube root by blocks—and in this connection it is well to remind teachers that in this subject blocks should be used if possible, as in no other way can the work be made equally clear—send

the pupil to the board to extract the cube root of a number, and, when he has found the root, direct him to explain, illustrating each step with the blocks as he proceeds. Be sure that the pupil handles the blocks as he explains. In this way it is possible to see if he is familiar with each step of the work.

Read chapter xi. Fitch's "Lectures on Teaching."

CHAPTER VI.

PERSONAL SUGGESTIONS.

Preparation of Work——Criticism——The Language of the Teacher——Points Relative to Recitations——Creating Doubt——On Explanation——Using a New Word——Questioning——A Mistake Often Unrecognized——A Caution——Expostulation——Don'ts.

Preparation of Work.—A certain amount of preparation for each lesson is an absolute necessity. The general plan and arrangement of the subject must be made beforehand, in order to gain the full value of the lesson, for there is not time to decide on the spur of the moment the most important parts, or how they shall be presented.

In every recitation, the two principal points to which the attention should be directed are the calling-up of that previously learned (review), and the imparting of new knowledge (advance work). In doing this, the teacher will find it most profitable to take up that part of the review most intimately connected with the advance work, thus leading the pupil on logically from one truth to another. In a thoughtful preparation of a subject, these questions naturally arise:

What portion of the review work leads most easily into the advance work? What parts of the advance work shall be brought into the greatest prominence? What questions shall be asked, and how comprehensive an answer required? In what way and to what extent may the blackboard be used? What amount of time shall be devoted to each division of the work? Many minor points can also be introduced, which will increase the interest in the subject and make the recitations spirited. Without such a preparation, all efforts in teaching will be rambling and, in great part, pointless.

Read the chapter, The Practice or Art of Education, in Payne's "Lectures on Education."

Criticism.—The following points of criticism are introduced to aid teachers in criticising their own or others' work. It must prove of benefit to a teacher to ask himself, seriously, "Have I zeal and animation in my manner of conducting a recitation? Have I sympathy and interest in those who are under my care? Is my plan logical and my matter correct?"

I. Manner.
   1. Animation.
   2. Variety.
   3. Expression of sympathy and interest.

II. Teaching.
   1. Correctness of matter taught.
   2. Thoroughness.
   3. Emphasis on important points.
   4. Rapidity.
   5. Conciseness.
   6. Variety, frequency, and emphasis in *drill.*

III. Order.

1. Attention gained and maintained.
2. Prompt and cheerful obedience.
3. Quietness, steadiness, and interest with which scholars work.

The Language of the Teacher.—It is of the greatest importance that one who is to give instruction should make such use of language as will convey the exact meaning intended, without a possibility of misconception. The unwise choice of a word often acts like a misplaced switch at a railroad centre,—the thinker is thrown off on the wrong track. It is no defence for the teacher to say that his powers of expression are not good; it makes him only a confessedly *poor* teacher, since the essential difference between good and poor teaching is the ability, or inability, to make ideas clear to the mind of the pupil. By the careless use of words, ideas wholly different from those intended to be conveyed, may become fixed in the scholar's mind, that will never be eradicated. Precision can be acquired by the diligent study of synonymes, and by a constant effort on the part of the teacher to make his words express the exact idea intended; and to do this he must train himself to habits of exact thought. If the thought does not stand out, sharply defined, in one's own mind, it is idle to expect it to be clearly seen by others.

Points Relative to Recitations.—There is far too much machine work in the way some teachers "hear a lesson." It is not enough that one should listen to that which has been prepared, assign an advance

lesson, and then dismiss the class. When a recitation is regarded by the teacher in this light, the pupils will naturally and surely come to regard the lesson as a task; and when this occurs, interest will fail. There are a number of points that should be considered in every recitation: 1. The pupils' powers of observation should be brought into prominence. 2. They should be taught to reason out that which is difficult. 3. They should be taught to recall that which has been prepared before, bearing upon the same subject. 4. An easy, graceful mode of expressing ideas should be cultivated. 5. The pupils should be aided as much as possible in acquiring confidence and an easy manner of reciting. 6. The teacher must give some positive knowledge, supplementary to that contained in the lesson. Text-books should be used merely as *suggestions* for lessons.

Other points to be considered are these:

The hearing of the lesson, in order to see how much of it the pupil comprehends. Explaining that which the pupil is not able to comprehend. Drilling on the review to fix in mind that which has already been learned. The assignment of the next lesson. Some time should be spent in looking over the advance lesson, and in suggesting ways by which the pupils can avoid difficulties and arrive at the correct results most easily; but in doing this, do not give too much help. The teacher's province is to direct and suggest ways and means.

Creating Doubt.—In calling the attention of pupils to a mispronounced word, give the correct pronunciation and stop there. Do not say, for instance,

"This word is pronounced *fran*chīz—not franchīz;" for this eventually leads to doubt as to which is correct. There are scores of other ways in which a teacher, unless careful, will destroy the permanency of impressions, by leaving in the mind some accompaniment that at last will simply create doubt.

On Explanation.—In explaining a fact to a pupil, it is important that the teacher be first thoroughly familiar with it himself. He cannot make a point clearer to another than it is to his own mind. He should also consider the ability of the pupils before him. With some it is necessary to use much more careful explanation than with others; therefore, to reach the intelligence of all, make the idea simple, clear, and to the point. The teacher, however, should not use such language as will imply that he regards himself talking to inferior intellects. Acts of condescension on the part of the teacher will surely be resented, as they should be. A figurative illustration should be used only when it makes the thought clearer; and all novel forms of expression, or odd ways of putting things, should be used with care, as they may hide the thought intended to be conveyed.

Using a New Word.—When a teacher uses a new word in his work, he should write that word upon the board, so that its form may come to the eye just after the sound reaches the ear. In this way the student will associate the correct pronunciation with the proper form of the word.

Questioning.—Particular attention should be

given by a teacher to his manner of stating questions. The points to be aimed at are: First, clearness;—the pupil has a right to demand this. Second, such a statement of the question as will not suggest the answer. Third, a question should not be asked in this way: "The Scotch came into the northern part of ——?" *Answer.* "England." Nor thus: "Is it ——? or is it ——?" The pupil very quickly learns to read the correct answer in the manner or tone of voice used by his instructor. It is hardly necessary to add that good English should be used in the statement of a question. In asking for a definition of the planets, for instance, it is a defect to say, "The planets are what?" Or, in chemistry, "A molecule is what?"

A Mistake Often Unrecognized.—The word *Louisiana* is mispronounced by many teachers who are usually correct in their pronunciation, by giving to the second syllable, which should have the sound of short *i*, the sound of long *e*. The reason for the mistake arises from the spelling given by Webster, to indicate the pronunciation, Loo′-e-ze-ä′-na, printing the second syllable "e" and placing the secondary accent on the first syllable. Now, if the word is pronounced with the secondary accent on the first syllable, the second syllable must have the sound of obscure "e," which does not differ materially from the short sound of "i."

A Caution.—Henceforth, see if you cannot pronounce the word "recess" properly, putting the accent on the last syllable.

Expostulation.—You talked in a high key all day. There was something unpleasant in your work, and you did not know what it was. What is spoken unpleasantly is heard unpleasantly, and your pupils felt there was something grating, something unpleasant, in their teacher's work. They could not tell, perhaps, what it was, but, nevertheless, they felt that something was not what it ought to be. It was the high tone of voice that you persisted in using, which has become so fixed a habit with you that you can scarcely break it. Your voice has become rasping, thin, and hard. It will take weeks, perhaps months, of persistent effort before you can overcome the habit and keep your voice where it belongs, in low, smooth tones.

Don'ts.—Don't be afraid to say, "I don't know," or, if necessary, "I was mistaken." If an error has been made, it is both more manly and more profitable to acknowledge it. You are setting a bad example and lowering yourself in the estimation of your pupils if you persist in maintaining that which you see is false. Teachers are too loath to confess ignorance on any subject that may be brought up by the pupils. A teacher cannot be expected to be informed on all subjects, and it is better to admit that you do not know than to give, at a venture, a reply that may be misleading.

Don't get into the way of using the index finger in gesture, as many teachers do. It is neither graceful nor forceful.

When a pupil has given an incorrect answer, do not shake the head and say *No, no,* but quietly ask the question of another.

In your illustrations and talks, quote nothing,

through temptation to say something amusing, that does not fit accurately and logically your topic.

Don't talk over school matters with every one you meet. They will perhaps talk to you about former teachers, and your part of the conversation may be misconstrued and enlarged upon. A teacher must be discreet.

Especially do not make complaints. Do not criticise your predecessor's work, or the condition in which you find the school. He probably left friends, and of these you will thus make enemies. Speak kindly of those who were before you, or do not speak of them at all. If it is necessary to make complaints, let them be made to the proper school officers. Your school will be more successful if it is the subject of but little comment.

Do not say, when hearing a recitation, "Go on, "Go ahead," "Proceed," etc. It is far better to set an example of courtesy to your pupils by saying, "Continue, Mary," or "Continue, John."

Do not scold. After the novelty has worn off, your sharp speeches will cease to be effective. Moreover, the most forcible language is that which is delivered calmly and dispassionately. Gentlemanly and lady-like bearing toward pupils on the part of teachers is almost sure to win a like return.

Treat your pupils as equals.—Nothing will bring them up to your own level as quickly as this. Make your pupils self-respectful by showing respect to them.

Don't worry. Make a vigorous effort to throw aside all care when school closes. Remember that nothing is to be gained, but much lost, by carrying through the twenty-four hours the burdens that should come

only during school hours. If the teacher can enter the schoolroom fresh each morning, the battle is half won at the beginning.

Don't be more ready to criticise than to commend. Factious criticism will cause pupils to think that nothing they can do will be *just right* in the teacher's eyes, and they will soon cease trying to excel. A few words of commendation will often prove a great incentive to effort.

Do not make any sudden or radical change in your manner of conducting a recitation, or in the discipline of your school. If you have decided to make a change, do it gradually.

Do not get into the habit of making apologies. Be careful that the occasion does not arise where an apology by the teacher is needed.

It is natural that a teacher, dealing with minds less informed than his own, should gradually come to feel above the general level of humanity. Don't allow yourself to become conceited by reason of your surroundings.

CHAPTER VII.

SCHOOLROOM SUGGESTIONS.

Beginning School——Putting Back——A Few Suggestions Upon Discipline——Punishments——A Problem——Tardiness —— Rest Periods —— Ventilation —— Lighting —— School Gymnastics——Information——To Give an Idea how to Compare——Dull Recitations——Alternating Studies——Quiet Periods——Division of Class——Plan for Getting Answers from each Pupil of a Large Class——A School Diary——Time Given for Questioning——Original Examples and Illustrations——Repetition——Necessity of Reviews——Graphic Examinations——The Value of an Object ——Error-box——Quotations——Questioning——Pupils to Keep a Note-book——Bulletin-board——Reporting Exercises——A Test of Quick Observation——Debating Club ——Schoolroom Decoration——Suggestions About Receptions——Closing Exercises.

Beginning School.—Be at the schoolroom early. On the morning of the first day be the first one there, and, in general, the teacher should be present when the room is opened. A spirit of lawlessness is apt to arise among pupils left without restraint, which may extend beyond the opening of the session.

Begin promptly. Scholars cannot be expected to be prompt in their attendance if the teacher does not set

the example. Care in having all things move by "clock-work" is not lost in its general effect on a school.

Say but little when opening your school. Especially do not lay down a great number of rules—these can be made as occasion demands. Do not boast of what you can do, or of what you intend to do. Children are keen to detect boastfulness and to discredit those who make use of it.

Take the names as the classes are called. This will save much confusion and loss of time. If, however, the teacher desires all the names at the opening of the session, blank slips should be distributed, on which the pupil may write his name and the classes he proposes to enter.

Set all the pupils to work as soon as possible. Idleness is the precursor of mischief, and this on the first day means continual trouble. If the classes cannot be formed at once, give those who are waiting some review work, or tell them a short story and ask them to write it out on their slates or on paper.

Make out an Order of Exercises for your own use before opening the school. Even though it be your first term in the school, you can find out from the pupils or school officers what classes are to be formed. You can thus intelligently organize the school.

Show no sign of indecision. Pupils are quick to notice this, and make their estimate of your character accordingly. Hesitation is confessed weakness.

On the second day have a permanent Order of Exercises made out and posted. Uncertainty in regard to the time of their recitations demoralizes the pupils and delays the actual commencement of work.

Putting Back.—It is a mistake to put children back in their studies. It has a disheartening effect, and it can easily be seen at what a disadvantage a child is placed who has lost interest in a study. There is no necessity for putting back. The fundamental principles of any study can be taught in one place as well as in another. If a child in percentage stumbles over his fractions, give him extra help and make that subject clear to him. If your pupils in an advanced grade cannot write a simple sentence correctly, put them into rhetoric and take up sentence-writing. If they are in the Fourth Reader when they should be in the Second, don't discourage them by putting them back into the Second Reader, but get some simple story-books or bright story-papers and let the reading lesson be from these. The best "putting back" is when the pupil himself perceives his deficiency and feels the need of simpler work; but the teacher should exercise tact in bringing about this condition of mind.

A Few Suggestions Upon Discipline.—It is hard to write it, but cases of truancy, fighting, vulgarity, profanity, and stealing do occur in many schools. In cases of truancy, communicate with the parents at once; reason with the pupil, and as a last resort call on the truant officer or constable.

For untruthfulness, let the pupil feel what it is to have others lose confidence in him. Often it will be well to let him realize this loss of confidence a long time.

In cases of fighting, keep the pupil in at recesses, giving him his recess after the others; oblige him to come into the schoolroom as soon as he comes upon

the ground, morning and noon, and keep him after school until others have gone home.

For profanity and vulgarity, separate the pupil entirely from others, and suspend for second offence.

Stealing may be pretty effectually dealt with by suspension, apology, and restoration of the stolen article.

Impertinence and disrespect to the teacher, providing the teacher has not brought it on, should be apologized for in presence of those before whom the act was committed.

Punishments.—The nearer you can reduce punishments to a minimum the better. Occasions sometimes arise, however, when some form of punishment seems necessary; but in inflicting this be careful not to injure the pupil's self-respect. Personal indignities or torture should *never* be used, and any form of ridicule should be used sparingly. The pupil should never be made to feel that he is punished by his teacher through any vindictive feeling. Threats of punishment should not be made. Act promptly when occasion demands, but do not talk about what you *will* do. It seems hardly necessary to add that study should never be used as a means of punishment.

A Problem.—Many teachers have found that the root of all evil in teaching is whispering, and it is a problem with most teachers how to suppress it.

A word or two of communication that arises from mere forgetfulness should not be looked upon as a serious evil; but wilful whispering is a demoralizing factor in a school and should be suppressed at once. Some teachers have found that calling for a report at the close

of the session from those who have broken the rule has the effect of diminishing the annoyance. It is wise to meet the matter squarely. Show the pupils that disorder of any kind hinders the progress of the school; that whispering is a disorder, and that whispering in the presence of others is a rudeness that would not be tolerated in their homes, and that good manners are as essential in the schoolroom as elsewhere. Much of the necessity for communication can be avoided by allowing a moment or two at the opening of the session for each one to obtain any article that has been forgotten. Do not be continually talking upon this subject to the school. Disorder of any kind is usually attributable to but few. Treat these privately. The effect on them and on your school will be better for such a course.

Tardiness.—Much confusion and annoyance result from the late entrance of a few pupils at the morning or afternoon opening. From the numerous plans for securing prompt attendance given below, the teacher may find something that will suit his case.

(*a*) In the first place, the teacher should never be late himself. He should be present some time before the opening, and give to each one coming in a pleasant greeting.

(*b*) In cold weather be sure that the room is warm enough, at least fifteen minutes before the opening. Don't compel the pupils to be late in order to find a warm room.

(*c*) For five or ten minutes after roll-call some teachers have an object lesson in science, bringing in objects upon which to talk to the scholars, as leaves

or grasses, rocks, mosses, etc. If this is made attractive, the pupils will try not to miss it.

(*d*) Tickets may be given small pupils for each day's punctual attendance—a certain number of these tickets entitling the possessor to an earlier dismissal on Friday afternoon.

(*e*) Pupils may be kept after school the same length of time they lost at the opening of the session.

Have the last bell rung five minutes before the opening of school, that sufficient warning may be given.

Some teachers have a portion of space reserved on a blackboard near the entrance door on which is written the word "Tardiness." Pupils coming in late are required to write their names beneath this word, together with the time of entrance, as 9:10, 9:15, etc., and make up the time at the close of the session. They erase their names before leaving.

Other teachers require pupils entering late to write their names on a card or slip of paper, with the time of entrance, and leave it at the desk. Report of these cards is made to the parents at the end of the month.

Another plan is to grant a holiday to the whole school on the first Monday of each month, provided there has been no instance of tardiness during the preceding month. Under such circumstances each pupil is unwilling to be the one to deprive all the others of a holiday.

Pupils who are thoroughly interested in school-work will seldom be late, but there are always some who appear five or ten minutes after the opening of the session. A special effort must be made to bring these in on time; for the interruption of late entrances demoralizes the school at the start. It may be that

pupils come late to avoid the dulness of the opening exercises. A long roll-call, and the reading of Scripture not readily understood by youthful minds, may be of this nature. Make the morning exercises so bright and cheerful that to miss them will be felt a loss. Let the Scripture reading be short but appropriate; and let it be preceded and followed by music, if possible. Do away with the roll-call, and mark absences in your register while the pupils are studying.

Some teachers have a "Tardy Friday." On that day all who have not been tardy during the term up to that time are dismissed an hour earlier than the others. All who have been tardy are required to remain.

Another device for securing punctuality is to spend the first fifteen minutes at the opening of the session in talking about something that is transpiring in the world at the time. The teacher asks a question in regard to some notable public event; if no one can answer it, the question is repeated the next morning, and a lively curiosity is excited. The pupils ask parents and friends, who in turn become interested, and the question is discussed in the family circle. Soon the answers begin to come in; clippings from papers and books are brought and the question is discussed. In this way, the first few moments are made so interesting that no one wishes to lose them. Teachers may find it advantageous to make personal visits to the parents in regard to the matter. If the co-operation of the parents can be secured, there will be very little tardiness.

Yet another way to secure punctuality is to read for a few moments each morning a few pages in a con-

tinued story. By the last-named device, two things will be gained,—attendance may be secured, and a taste for good reading cultivated in the pupil.

After all, the most efficient plan to prevent or diminish tardiness is to arouse the pride of the scholars in making the school successful, and this will prove a great factor for good in many other directions. In graded schools competition can be aroused between different rooms, each trying to have the best record in punctuality and attendance.

Rest Periods.—When your pupils appear tired and dull, throw open the windows and have a breathing exercise. Good work cannot be done in a schoolroom where the air is impure from insufficient ventilation. Teachers are inclined to overlook the physical welfare of their pupils. They should never forget that to have a sound mind, one must have a sound body in which it may dwell. The seeds of disease are far too often implanted in the bodies of delicate pupils by the over-heated and impure air of the schoolroom. In these exercises great care should be taken never to inhale or exhale suddenly. Nor should the pupils practise holding the breath for any considerable length of time.

1. Place the hands on the hips ; draw a long breath ; expel the air slowly. Repeat twice. 2. Draw in a long breath. Send the hands straight up in the air; bring them back to the shoulders. Expel slowly. Repeat twice. 3. Draw a long breath. Draw the body backward from the waist ; bring it back again. Expel slowly. Repeat twice. 4. Draw a long breath. Bend the body forward from the waist ; return to an

erect position and expel the breath slowly. Repeat twice. 5. Draw a long breath ; bend the body to the right ; return to an erect position. Expel the breath slowly. Repeat twice. 6. The same, bending the body to the left. 7. Draw in a long breath ; stretch out the arms horizontally ; return to the shoulders. Expel slowly. Repeat twice.

Let these exercises occur at the middle of a session, or whenever there seems to be a need of them. Do not let them degenerate into disorder ; if any persist in making play of it, let them take their fresh air outside the schoolroom.

Ventilation.—Have a board fitted to slide between vertical cleats fastened to the window-casings, a few inches from the sash. This device gives an upward inflection to the cold air as it enters, causing it to become gradually diffused throughout the room, without being felt as a draught by the pupils. If ventilation must be sought by opening the windows, do not open those on the windward side, as this would cause a draught directly upon the pupils, and would not prove as beneficial in freeing the room of impure air as though the opposite windows were opened, when the air in the room would gently pass out to join the current outside. If possible, the air should be admitted to the schoolroom near the floor and allowed to pass out at the ceiling, but the air admitted should be warm, or rendered warm before it is breathed. To do this in many buildings containing but one room, is a simple matter. Let the air be admitted through an opening directly beneath the stove. This may be brought about by having a wooden flue leading from an open-

ing in the foundation wall to the opening beneath the stove, which may be closed at either end by a sliding-door, when the draught is too strong. The air as it enters will thus be warmed. Openings should also be made in the ceiling to allow the impure air to pass out.

Many teachers have narrow strips of boards made the same length as the width of the window. These are placed under the lower sash, when an air-passage is formed between the upper and lower sash, and in such a way as to avoid a direct draught.

As a last suggestion, remember that the lassitude and lack of interest so often noticed in schoolrooms is due, in a great measure, to the impure state of the air. The present success of a school and the future health of pupils depend in no small degree upon the kind of air they breathe in the schoolroom.

Lighting.—The light in a schoolroom should always enter the room at the sides or in the rear: pupils should not sit facing a window. If there is such an abomination in your room, place a dark curtain over it. When it is necessary to use gas or lamps, the same care should be used. Never allow the light to shine directly in the faces of the pupils. The walls of a schoolroom should not be so white as to reflect a dazzling light into the eyes. If this is the case, they may be cheaply tinted drab or fawn color.

School Gymnastics.—A few moments spent each day in brisk and orderly gymnastic work will be found to pay, both in driving away weariness and dulness, and also in the development of the growing bodies of

the pupils. It is particularly important that these exercises be conducted according to some definite plan which experience has found best for accomplishing the purposes desired. Much more precision and interest will be attained if music can be provided to accompany the exercise. If a piano or organ is not practicable, a drum beaten in time will be found a good substitute. Many of the scholars, through a feeling of awkwardness, will ask to be excused. This trouble may be obviated by commencing with exercises for the hands and arms, which can be practised while sitting. After a little, all will be ready for the standing exercises. If dumb-bells cannot be obtained, small bits of wood, four inches long and an inch in diameter, should be grasped tightly in the hands. If possible use dumb-bells, as even their slight weight requires a certain bracing of the body which calls into action nearly all the muscles. Do not allow any exercises except such as are known to be beneficial, for ill-advised action of the muscles or overtaxing does more harm than good.

The following exercises will be found practical and easy of accomplishment:

For the Hands, Wrists, and Arms.—1. Open and shut the hands vigorously ten times; then a pause, marked by the music, followed by the same exercise twice repeated.

2. Place the hands palms downward on the desk, raise them from the wrist only, ten times; pause, marked as before, and two repetitions.

3. Elbows resting on the desk, hands turned on the sides. Raise the hands as high as possible ten times; pause, and repeat twice.

4. Arms held out straight before the body, bring the hands to the shoulders ten times; pause, and repeat.

For the Chest and Back.—1. Let the hands meet over the head, both palms forward; bring them down in the same plane to the side of the body, holding the shoulders rigidly back; repeat ten times.

2. Raise the arms up over the head, bend the body till the hands nearly touch the feet, bring the body to an erect position again with the arms raised as before, and repeat five times; pause, and repeat once.

3. Grasping the dumb-bells, or sticks, raise the hands as far as possible above the head, and return to the shoulders ten times; keeping the head thrown back, so that the eyes are gazing directly at the ceiling.

For the Lower Limbs.—1. Standing erect with the hands upon the hips, raise the whole body on tip-toe ten times; pause, and repeat once.

2. Standing erect with the hands upon the hips, lower the body by bending the knees and then immediately rise to an erect position again; repeat five times, pause, and repeat once.

3. Standing erect with the hands upon the hips, bend the body sidewise to the right in the form of a bow, then to the left in the same manner; repeat ten times, pause, and repeat twice.

The teacher should use his own judgment as to the amount of these exercises which will be profitable for his pupils to take. If the pupils are very young, or not accustomed to exercising, a few motions of each kind only should be taken at first, gradually increasing the amount. It is much better to take a *few of each* than to spend the whole time on one or two motions, as it is important that all the muscles of the body be brought

into action, to produce a harmonious development. Plenty of fresh air should be allowed in the room during this exercise. Have the room cool and the children will not become heated and made liable to receive a cold. Insist strongly that all stand erect and keep the shoulders back, that the lungs may have a chance to expand.

Information.—Once a week the teacher may take a half-hour to question the school upon points of general information. When the questions can be answered by any one of the pupils, let the answers be obtained in this way; when all are in ignorance of the answer, the teacher should give the information, enlarging on topics of the most concern. In this way the pupils will be interested and will also secure much valuable knowledge. Questions will readily occur to the teacher —a few only being given below:

1. What is the source of alcohol? How does it derange the action of the bodily functions? (Teacher should enlarge upon the destructive effect upon the brain, stomach, heart, kidneys, and the *will-power* of the user.)

2. Does the U. S. receive any income from the Territory of Alaska, and what is the form of government there?

3. What State, or Territory, produces the greatest amount of gold next to California? What other States produce gold? How is gold mined?

4. To what extent has the central portion of Africa been explored, and by whom?

5. What is the difference between our own form of

government and that of other countries, as England, Germany, etc.?

6. How old must a man be before he can be a Senator, a Representative, or President of the United States?

To Give an Idea How to Compare.—To cultivate the habit of close observation, let the teacher take two pieces of money (a penny and a dime will answer), and, holding them up before the class, ask the pupils to tell wherein they are alike. They will say that they are both round, metals, engraved, coins, etc. Write all these answers on one part of the board. Then ask the pupils to mention the points wherein they differ. They will say that they differ in size, thickness, color, in the characters engraved on them; that they are made of different metals; that their edges differ, etc. Write these answers upon another part of the board. Then ask for a word that will express the points in which they are similar. They will soon hit upon the word "Likenesses," and upon "Differences" for the points in which the coins are dissimilar.

Such a device may be used with great profit in beginning Botany, and in any other study where comparison is a basis of procedure.

Read ch. iv., part i., sec. vi., Tate's "Philosophy of Education."

Dull Recitations.—It is the most difficult thing in the world for the average teacher to see when his class is tired, and when he has tired it. Time and time again such a thing happens, but still he goes on—still he continues to tire his class. Yet all the while he is conscious there is a drag. But the drag occurs day

after day. "How should he avoid it," does one ask? Stop, the moment the recitation begins to drag. If the time allotted is thirty-five minutes and the lesson begins to drag after twenty-five, stop at once, and dismiss the class. What would be the result? In the first place, the teacher would gain in power and freshness for his class, and upon himself the result would be that he would make a preparation which would last through the time and sustain the interest of his class.

Alternating Studies.—Do not attempt to hear daily recitations in everything, if your school is a large one, but alternate the studies of the more advanced pupils.

Quiet Periods.—In some schools this plan would have a good effect. The teacher finding there is noise and restlessness, stops work, and says, "Now let us take ten minutes of hard study. We must have the room perfectly quiet. Let me see how many can keep steadily and quietly studying for the ten minutes." If the effect is not dissipated by the teacher, the influence of such a period will be felt in the quiet on-going of school.

Division of Class.—It is sometimes convenient to divide a class into two, three, four, or more sections. There are several ways in which to accomplish this quickly and impartially.

1. Let the class number as they are seated; a division may then be made of odd and even numbers.

2. Call off promiscuous numbers and keep account of them on paper.

The device of assigning a number to each pupil may be made to furnish a *separate* example for each member of the class. Suppose, for instance, the class is working in notation and numeration, the teacher may say, "Put down your own number, prefix to it two ciphers and a six, and annex a nine, two ciphers, and your own number; point off and be ready to read." No. 18 would then read 6,001,890,018. No 11 would have an entirely different number—6,001,190,011—and likewise the rest.

The same device can be used in fractions, compound numbers, percentage, etc.

Plan for Getting Answers from each Pupil of a Large Class.—Where classes are large, and it is desired that all take part in the recitation, adopt the following plan: Give out a certain number of questions, and ask all the members of the class to write them on slates or paper. Let each one then write the answers below the several questions. Call upon some one to read the first question and its answer. If correct, ask all who have a similar answer to raise hands. If incorrect, call for correction. Go through the whole list of questions in this way.

A School Diary.—The teacher, having procured a suitable blank-book, may allow the school to vote for a secretary each week, who will write up each day the events of that day. To give the secretary some importance, a small badge may be provided.

Time Given for Questioning.—Have a certain time in your recitation work when the pupils can ask

questions on the day's lesson, or on any of the work gone over, which may still be troubling them.

Original Examples and Illustrations.—Let pupils bring in original examples in each subject as they pass along. These may be distributed among the members of the class for solution, to be reported on the following day.

Repetition.—A great part of the benefit of some teachers' work is lost through lack of repetition. This occurs most often in teaching small children Ideas can only be firmly implanted in their minds by continual repetition. The same is true, though perhaps to a less extent, with the majority of older pupils. To secure the best results, review; and after this —— review.

Necessity of Reviews.—In order to fix the facts acquired firmly in the mind, frequent reviews are invaluable. Sometimes a written reproduction of past work should be demanded, and sometimes an oral reproduction. The teacher may make a brief restatement of the chief points in the work after the scholars have finished. It is also important that each recitation should begin with a short review of the one preceding it. It will occasionally be found well to divide the class into two parts, and allow a pupil on one side to question any one upon the other side, but on the condition that the one putting the question shall be fully able to answer the question himself. It is also of value to set apart a time when each one may ask any ques-

tion that has puzzled him in his work; but indiscriminate questionings should not be allowed.

In reviews, write your questions on blank cards, and let the student write his answers on the board, and encourage the class to criticise what is wrong. When there is a large amount of instruction, both oral and written reviews are a necessity. Pupils should rise and read their written reproductions, or recite the same orally; they should follow an orderly plan and a logical outline. In order that they may do this, the teacher must first have done it. The pupil takes his cue from his instructor, hence the teacher's lesson should be carefully wrought out. Read sec. xv., ch. iv., Tate's "Philosophy of Education."

Graphic Examinations.—In holding an examination of this sort, ask only such questions as can be answered by figures on the board. For instance, in physiology, a great number of questions on the structure of the heart can be answered by a drawing of that organ upon the board. Questions in geography can be answered by maps, drawn on the boards, showing cities, mountains, rivers, capes, etc. In almost all studies, questions can be asked, admitting graphic answers upon the board. Such an examination is sure to be a thorough test of familiarity with the subject.

The Value of an Object.—Many teachers will keep referring to the size of a brick, and yet never think to bring one into the schoolroom. Fetch one to school with you, and direct pupils to measure it. A bird in the hand will teach a child more about ornithology than a dozen in the bush.

Error-box.—Have a box at the desk, and ask the pupils to write out, and place in this all the errors they have noticed in the language which has been used in school during the day. Let each paper be signed by the one writing it. The box may be opened each night before school is dismissed, or at the beginning of school the next day, and the papers read by the teacher, who should ask for hands to be raised for corrections.

Quotations.—To develop a taste for literature, take a few moments after the morning exercises, in which the pupils may repeat quotations from various authors.

Questioning.—It is of great importance in asking questions of pupils that a logical order be followed. Each question ought to prepare the way for that which follows, and lead to it. Many teachers make a failure because their questions are so worded that the pupil does not see what is meant by them. Others fall into the error of suggesting too much in asking a question. How much benefit can come from such an interrogation as this, "You would regard this as an important battle, would you not?" When pupils have become accustomed to the tone and manner of their teacher, unless he is on his guard, they will infer what the answer is from his very tone of voice.

To show what is meant by a *logical order* in questioning, we subjoin a few questions for giving a class an idea of a clause.

Practical men are usually diligent.

What kind of men are diligent?

What word modifies the subject?

In what other form can this sentence be placed without changing the sense?

Men who are practical are usually diligent.

What kind of men are diligent?

What word does *who are practical* modify?

To what word in the first form is *who are practical* equivalent.

What kind of a modifier is it?

In the clause *who are practical*, what is the subject? To whom does *who* refer? To what class of pronouns does *who* belong? What kind of a clause is this? What is its predicate? To whom does *practical* refer? What word in the clause does *practical* modify?

Read ch. vi., Fitch's "Lectures on Teaching."

Pupils to Keep a Note-book.—Advise pupils in the higher classes to keep a note-book and write in it lists of words, commonly misspelled or mispronounced, correctly spelled and pronounced, together with the new words they meet in their reading, with their correct spelling and meaning. The book will thus become a record of the pupil's progress.

Bulletin-board. — Have a bulletin-board in the schoolroom or in the hall of the building, on which may be posted notices. Newspaper clippings of stories, news, or humorous anecdotes may be pasted on the board, which will prove a source of interest, quiet amusement, and profit to the pupils. A brief summary of each day's news could be thus posted and the pupils questioned upon this.

Reporting Exercise.—A profitable exercise may be made by asking the pupils to make notes of any-

thing of interest which falls under their observation and tell it, in their own words, to the class. Make it a voluntary exercise, and allow it to occupy but a few moments. Encourage the pupils to carry note-books in which they may make notes of things suitable to report. In this way the habit of observation will be cultivated.

A Test of Quick Observation.—Try the plan of placing an object before the class, and, after it has been in view for a moment, remove it from sight, and call for an accurate description of it. Begin with simple objects and gradually substitute those which are more difficult.

Debating Club.—Where the boys of a school are of sufficient age, it will be a great advantage to them to have a debating society, conducted according to the usual parliamentary rules governing such bodies. It is a great loss to boys to pass from school to the duties of life, and not be able, for example, to make, or put, a motion properly. Besides familiarity in the manner of conducting such meetings, the boys would be learning something useful, and acquiring the habit of independent thought—the great object of teaching. The teacher should help organize the club, and should preside at the first few meetings, till the members become accustomed to the rules of procedure. Then they should elect one of their own number to preside. A few topics suitable for discussion by young people are given below:

Resolved, That the right to vote should be extended to woman.

Resolved, That government aid to education defeats the end sought.

Resolved, That the right to vote should be denied those who cannot read and write.

Schoolroom Decoration.—It is not possible for teachers, ordinarily, to go to any great length in the matter of schoolroom decoration, but every one can make an effort in that direction, and the effort will be amply repaid. Every evidence of refinement and taste which can be shown in the room will have a refining influence on the manners of the pupils. If the room is bare, cheerless, and dirty, as too many are, the effect is plainly seen, and an opposite effect is likewise plainly seen if the room is clean, bright, and tastefully arranged with pictures, flowers, and a few bright colors scattered about. Good pictures can be procured so cheaply now that there is but little excuse for bare walls. A few cents invested in dye would transform the cheerless white curtains into warm, bright colors. A little effort would transform the dirty and rusty stove into a respectable article of furniture. Teach your pupils to manifest the same neatness in the schoolroom that they would in their own homes. If you can interest the pupils in making the room pleasant and keeping it clean and orderly, you will have gained a great advantage both in the matter of discipline, and in the development of a regard for beauty on the part of the scholars.

During a large part of the year plants can be kept in the room and nothing makes it more homelike or pleasant. Have shelves arranged at some of the sunny windows, and ask each pupil to bring a plant.

Quick-growing vines can be trained about the window casings, and for this purpose perhaps nothing is better than the sweet-potato vine. It is only necessary to place a small potato of this variety in a vessel of water when it will begin to grow, and under ordinary circumstances, will increase an inch a day. A great number of these can be arranged about the various windows. Let the children take turns in caring for the plants.

In all your efforts to beautify the room, avoid everything which is out of taste. Cheap colored prints should be shunned. Buy engravings or photographs of pictures that will elevate the taste of the pupils.

Some teachers who are not able to secure even a small amount of funds to expend in decoration, cut the large effective wood-engravings from *Harper's Weekly*, and other illustrated papers, and paste these engravings upon pasteboard box-covers, which are thrown aside at every store. Tasteful selection and arrangement of such pictures give the room an air of refinement, and exert an educative influence upon the school.

Suggestions about Receptions.—At school receptions it is usually found necessary to have a stage, and this must be of good size, especially if dialogues are to be given. Neither teacher nor school officials should sit upon the stage. Such an exhibition is out of taste. Give special visitors a seat near the stage, but reserve the platform for those who are to take part. The order of proceeding should not be called off by the teacher. Have printed programmes, if possible, and let each performer go out in his turn without

waiting to be called. In building a platform care should be taken to have it of sufficient height that those in the rear of the room may have an unobstructed view. When dialogues or plays are to be given, a curtain will be found necessary. Have a stout cord stretched tightly across the front of the stage, and from this let the curtain be hung by small rings. It should be divided in the middle—one half sliding each way, and let small cords pass from the last ring in each curtain, at the centre of the stage, to each side of the platform, so that the curtain may be drawn together or apart from the sides of the stage.

Closing Exercises.—It is always well to make the closing of a term or year a special occasion, in which the friends of the school may become acquainted with the work done, and an interest created outside the pupils and their parents. This closing exercise will consist partly of a review or examination on the work done; and, in addition, to give a pleasing variety, some literary work should be presented by the pupils. This need not be of the same character for all, but may vary according to the age and ability of the student. The most advanced may present something original, either as a discussion of some subject—one speaking in favor and one against it—or as a composition or essay on some timely topic. Good dialogues will always be well received, as will also tableaux. If possible, have music several times during the exercises. This will be of interest to visitors, even if it is not elaborate. Use the songs that have been sung in school, during the term.

One of the pupils may prepare and read a History of the term, giving a brief account of all that has occurred, together with the work accomplished. It is well to have printed programmes, if that is convenient; if not, they may be neatly written by the scholars. See that visitors are made welcome and courteously shown to seats.

Let all such exhibitions be rehearsed again and again. It is only in this way that a successful entertainment can be secured. The audience is likely to judge your work by the showing which your pupils make on such occasions. If any one is likely to fail, it is far better to withdraw him till another time, when his part can be more thoroughly committed.

CHAPTER VIII.

OUTSIDE THE SCHOOLROOM.

In Regard to the Parents of Pupils——The Noon Recess——Teach the Constellations——The Judgment of Two is Better than the Judgment of One——Another Suggestion for the Noon Intermission——A Scrap-box——Scrap-book.

The Parents of Pupils.—The reputation of a school depends, to a great extent, upon the way in which the parents regard it, and their opinion is usually formed by the reports which the children carry home. It is therefore important that nothing be said or done by the teacher which may be misconstrued by the pupils. If it be possible, and it ought to be possible, let each pupil feel that you are truly interested in him. In no other way can you gain such a hold on the pupil, or better arouse the parent's interest in the school. When you meet a parent, if you can honestly do so, do not fail to speak pleasantly of the child. In this way you will gain the good-will of the parent, and arouse the self-respect and ambition of the pupil, since he will regard himself as an object of interest to his teacher. Do not fail to invite the parents to visit the school, and when they come make them feel at home, but do not make any change in your usual exercises. Your school is very sure to be successful if you can arouse the parents' interest in your work.

The Noon Recess.—In country schools, where the children live at a distance from the school, it is necessary for them to carry a lunch and remain during the noon hour. In this hour much that is ill-bred, and much that is frequently of a vicious nature, may be learned by them, unless great care be taken to have the hour filled with orderly, harmless amusement. If the teacher also remain during the hour, there is an opportunity to set an example of good-breeding in the manner of eating lunch, and in other ways. Encourage the use of napkins, and a neat appearance and orderly manners. After lunch, music, stories, or interesting games are in order. If the teacher can engage heartily in these, he will gain a firm hold upon the sympathies of his pupils, and will find his discipline easier in school hours. It may be objected that the necessary work of the school is sufficient tax upon a teacher's strength. But will the teacher not come to the afternoon session in better trim, having occupied the hour thus, than would be possible after enduring the confusion and annoyance of the usual noon intermission? One rule should be rigidly regarded; if any pupil is discovered using improper language about the schoolroom, he should be removed from school at once. The schoolroom must be pure and fresh, morally,—this is of far more importance than arithmetic or grammar.

Teach the Constellations.—The teacher would add to the interest of his school, and increase the knowledge of his pupils, if on clear evenings he should take them out and teach them the different constellations, telling them at the same time the legends connected with each. During the day he could announce

the constellation that would be seen that evening, and place dots on the board to represent the position of each star in that constellation. Dots may be made large to represent the bright stars, and the names of these written out. In this connection, be careful that the names are correctly spelled, and all the words properly pronounced. A mispronunciation taught at this period will, perhaps, be carried through life. A lasting benefit may be secured by such teaching. Some of these boys may become sailors to whom this knowledge will be most necessary. The work of others may compel them to be out of doors at night—on the road, or in the fields, when familiarity with the heavens will be an enduring source of pleasure. Another point to be noticed is the elevation of character that comes when the thoughts are turned up from the dead level of common things to that which is mysterious and grand. The attempt to grasp the immensity of stellar distances can but broaden the mind by the very act.

Begin in the latter part of October to teach the constellations. Dot upon the board an outline of the Pleiades, and tell in what part of the sky they will be visible at a certain hour. Call attention to the brightest star in the constellation, Alcyone. It will be found that many a scholar has singled out this little cluster long before hearing of constellations, and has called it, improperly, of course, the Little Dipper. Having the Pleiades as a basis, it will be found quite easy to go from this to other groups. Right below the Pleiades, and covering five or six times as much space, will be found, in the shape of a letter V turned on its side, the Hyades, with its bright star Aldebaran. Moving north from each of these constellations, we find Auriga,

its bright star Capella. In the west-northwest may be found Lyra, with its bright star Vega, an easy constellation to outline and to find. Returning to the eastern sky, under the Hyades, is to be seen that large and beautiful constellation Orion, scattering a star-twilight all about it. Under Auriga in the latter part of November, at nine o'clock, will be found the constellation of the Twins, Castor and Pollux forming its bright stars.

In January, the Dipper and its pointers can be searched out, and at the same time Polaris, or the pole-star. Cassiopeia is on the opposite side of the pole from the Great Bear, at nearly the same distance. This constellation can be readily recognized from its three or four bright stars, disposed in a line broken into pieces at right angles to each other.

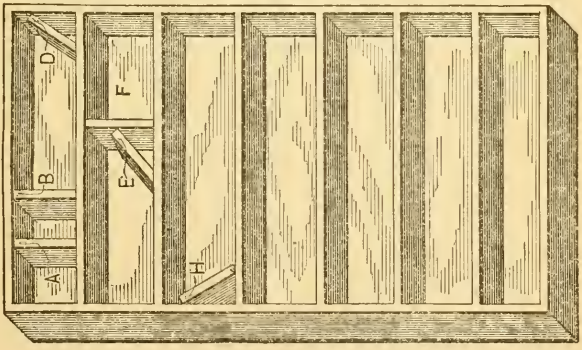
The teacher should consult a star map, which can be found in any text-book upon Astronomy. If he know nothing of that subject, he can easily gain the little information necessary to direct his pupils in their search for the constellations. We are urging that only the marked constellations be taught, and we complete this topic by naming the rest of these: The Great Dog, the Little Dog, Leo, Virgo, Boötes (the Bear-driver), Hercules, Job's Coffin.

The Judgment of Two is Better than the Judgment of One.—Whenever a teacher has an unusual case of discipline, it is best to consult the trustees or the parents before taking action.

Another Suggestion for the Noon Intermission.—If the teacher own a microscope, much enter-

tainment can be given pupils on days when the weather is unfit for them to be out of doors. Various small objects viewed under the microscope will afford much pleasure and matter for conversation. If the teacher have not mounted slides, he can find enough all about him to exhibit. Parts of insects placed on the slide, grains of pollen dust from different flowers, etc. We add one suggestion not generally known. Cut off a piece of the Deutzia leaf, and also a piece of the calyx of the flower, and place them under the microscope. Beautiful stars of different shapes will be seen—six-pointed on the calyx and four-pointed on the leaf. There are two varieties of the Deutzia, the *dwarf* and the *high*, each variety possessing stars of different shape.

A Scrap-box.—A convenient receptacle for the preservation of newspaper clippings can be made in



the following way: Take old envelopes of a uniform size—3¼ x 5½ inches will be found convenient—square

the torn end, and provide a long and narrow box (an envelope box will do, if it is not convenient to have one made like the diagram), into which these envelopes will fit side by side. Cut from pasteboard a number of pieces the same size as the envelopes, with which to separate them into alphabetical divisions. Into these envelopes, in their own properly lettered divisions, can be placed folded cuttings which it is desired to preserve. If, for instance, Blaine's "Eulogy on Garfield" has been taken from the columns of a newspaper, it will be placed in an envelope in division "B," and across the upper end of the envelope should be written "Blaine's Eulogy on Garfield." The advantage of such an arrangement, in the saving of time, is a suggestion that needs no further word of recommendation.

Scrap-book.—Another way to preserve clippings, which may be preferred by some to the scrap-file, is the scrap-book, which may be made an especially valuable book for teachers, and at almost no cost. Take any large-sized volume such as the Congressional Record, and cut out every other leaf, so that when the cuttings are pasted in, the book may be of the original thickness. In this may be placed poetry, stories, bits of travel, natural history—the habits of animals, birds, and fishes. Pieces suitable for declamation and reading can also be placed here. Every teacher can readily see the value of such a collection. Articles relating to matters of history and biography—in fact, everything that will be available in the teacher's work can be preserved in this way.

CHAPTER IX.

HISTORY.

Outline of United States History——The Value of Geography in Teaching History——Plan of Recitation for History Class——The Study of History by Preparing Written Papers——Dates——Administrations of the Presidents——Drawing in History——Civil Government——English Sovereigns.

Outline of United States History.

[As Used in the Schools of Cambridge, Mass.]

I. America Before Columbus.
Its Inhabitants. Its Antiquities.

II. The principal Discoverers and Explorers of America.

1. Spanish.
2. English.
3. French.
4. Dutch.

Name and describe briefly their most important discoveries and explorations.

III. The Permanent Settlements in America.

1. St. Augustine.
2. Port Royal, N. S.
3. Virginia.
4. Quebec.
5. New York.
6. Massachusetts.
7. New Hampshire.
8. Maryland.
9. Connecticut.
10. Rhode Island.
11. Delaware.
12. North Carolina.
13. New Jersey
14. South Carolina.
15. Pennsylvania.
16. Georgia.

State when, and by whom they were settled, and the object of settlement.

IV. The Colonial Wars.

1. Wars with the Indians.
2. Clayborne's Rebellion.
3. Bacon's Rebellion.
4. King William's War.
5. Queen Anne's War.
6. King George's War.

} State where carried on.

7. French and Indian Wars. { Time, Cause, The Objective Points, Treaty of Peace.

8. The American Revolution.

(1) Causes. { Navigation Act. Writs of Assistance. { Stamp Act. Unjust Taxation..... { Bill of 1767. Boston Massacre. { Tea Tax.

(2) Defensive Measures. { Sons of Liberty. Colonial Convention. Minute Men. First and Second Continental Congress.

(3) Leading Events.

1775. { Skirmishes at Lexington and Concord. Battle of Bunker Hill. Siege of Boston.

1776. { Evacuation of Boston. Declaration of Independence. Campaign in New York. Trenton.

1777. { Princeton. Campaign in Pennsylvania. Burgoyne's Invasion. Valley Forge.

1778. { Aid from France. / Evacuation of Philadelphia. / The British capture Savannah.

1779. { Naval Exploits. / Attack on Savannah.

1780. { The British Capture Charleston. / Arnold's Treason. / Gates and Camden.

1781. { Green's Campaign in the Carolinas. / Ravages in Virginia. / Siege of Yorktown.

1783. { Treaty of Peace. / Departure of the British.

(4) Depreciation of the Currency.

V. THE GOVERNMENT.

1. Of the Colonies. { Charter. / Royal. / Proprietary. } { Distinguish between them.

2. Of the United States. { The Confederation. / The Constitution.

VI. THE UNITED STATES UNDER THE CONSTITUTION.

1. *George Washington's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events. { Financial Affairs. / Relations with Foreign Powers. / Different Capitals of the United States. / First Cabinet. / Discovery of coal. / Cotten gin invented.

2. *John Adams's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events. { Death of Washington. / Mode of Jefferson's Election.

3. *Thomas Jefferson's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events. { Purchase of Louisiana. / Fulton's Steamboat. / Aggression of Great Britain.

4. *James Madison's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events. { War of 1812. { 1. Cause. / 2. Where carried on. / 3. Important events by land and sea. / 4. Treaty of peace. / War with Algiers.

5. *James Monroe's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events. { Construction of the Erie Canal. / First Steamboat Crosses the Atlantic. / Acquisition of Florida. / Missouri Compromise. / Monroe Doctrine. / Mode of John Quincy Adams's Election.

6. *John Quincy Adams's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events. { Death of John Adams and Thomas Jefferson. / First Railroad Built.

7. *Andrew Jackson's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Event.—Nullification.

8. *Martin Van Buren's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events.– None of special importance.

9–10. *Administrations of William Henry Harrison and John Tyler.*

(1) When Inaugurated. Length of Terms.

(2) Leading Events.
- Death of Harrison.
- Rise of Mormonism.
- Annexation of Texas.
- Beginning of Electric Telegraphy.

11. *James K. Polk's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events.
- War with Mexico.
  1. Cause.
  2. Important Events. Taylor's Campaign; Operations in New Mexico and California; Scott's Campaign.
  3. Treaty of Peace.
- Discovery of Gold in California.
- Wilmot Proviso.

12–13. *Administration of Zachary Taylor and Millard Filmore.*

(1) When Inaugurated. Length of Terms.

(2) Leading Events.
- Death of Taylor.
- Discussion of the Slavery Question.
- Compromise of 1850.

14. *Franklin Pierce's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events.
- Gadsden's Purchase.
- Opening of Japan.
- Kansas-Nebraska Bill.
  - Border Warfare.
  - Squatter Sovereignty.

15. *James Buchanan's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events.
- Dred Scott Decision.
- The First Atlantic Cable Laid.
- Personal Liberty Laws.
- John Brown's Raid.
- Election of Lincoln.
- Seven Southern States Secede.
- A Southern Confederacy Organized.

16. *Abraham Lincoln's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events.

A. The Rebellion.

a. Cause. Slavery.

b. Principal Events.

(*a*) Fall of Sumter.

(*b*) First Blood Shed.

(*c*) Operations for the Retention of the Southern States.
- Of Missouri.
- Of West Virginia.
- Of Kentucky.
  - Bragg's Expedition.
  - Iuka and Corinth.
  - Murfreesboro'.

(*d*) Campaigns against Richmond and its Defending Army.
- Bull Run.
- Peninsular Campaign.
- Pope's Campaign.
- Antietam Campaign.
- Fredericksburg Campaign.
- Chancellorsville Campaign.
- Gettysburg Campaign.
- Wilderness Campaign.
- Shenandoah Campaign.
- Siege of Petersburg.
- Fall of Richmond and Surrender of Lee.

(*e*) Rise of the Navy, and its Share in the War.
- Blockade of Southern Ports.
- Opening of the Mississippi River.
- Capture of Coast Cities and Forts.
- Encounters with the Rebel Navy.

(*f*) Opening of the Mississippi River.
- The Part Performed by the Navy.
- The Part Performed by the Army.

(*g*) Movements for the Mastery in the Heart of the Confederacy.
- Chickamauga.
- Chattanooga.
- Sherman's Campaign from Chattanooga to Savannah and Northward.
- Thomas's Nashville Campaign.

c. Emancipation Proclamation.

d. Effect on the Finances.

e. Cost in Men and Money.

f. Our Relations with Foreign Powers.

B. Assassination of the President.

17. *Andrew Johnson's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events.
- Disbanding of the Army.
- Thirteenth Amendment.
- Fourteenth Amendment.
- Admission of Seceded States.
- Impeachment of the President.
- The Atlantic Cable.
- Purchase of Alaska.

18. *Ulysses S. Grant's Administration.*

(1) When Inaugurated. Length of Term.

(2) Leading Events.
- Pacific Railroad Opened.
- Fifteenth Amendment.
- Treaty of Washington.

19. *Rutherford B. Hayes's Administration.*
   (1) When Inaugurated. Length of Term.
   (2) Leading Events.—None of special importance.

20–21. *Administration of James A. Garfield and Chester A. Arthur.*
   (1) When Inaugurated. Length of Terms.
   (2) Leading Event.—Assassination of the President.

VII. Civil Progress.
1. Prominent Statesmen.
2. Eminent Authors and their Principal Works.
3. Progress of Education.
4. Noted Inventions.

The Value of Geography in Teaching History.—A noted teacher and writer has said that "history without geography is incomplete and unsatisfactory." Let the teacher keep this constantly in mind; for nothing so effectually aids a scholar to hold tenaciously the account of a battle or a campaign, as tracing it out carefully upon the map when studying. Suppose a pupil, in his study of the American Revolution, is required to trace the movements of the army under Washington from his taking command at Boston to the surrender of the British at Yorktown, naming the battles and encampments, together with the important dates; it will be found that the pupil's realization of that portion of the Revolution with which the movements of this army are connected, is then much more vivid than is possible without this connected use of the map.

A plan of a battle-ground drawn upon the board, and

the movements of the opposing troops dotted in lines as the pupil recounts the events, is another form of using geography in teaching history.

Trace General Grant from his being placed in command, before the battle at Belmont, through all his movements till Lee surrenders to him near Richmond.

Trace Sherman in his march to the Sea, and then northward to co-operate with Grant, pointing out the place of each engagement and giving a very brief account of it. Such topics as the above cover more than one year; but such a plan used in the study of history will give a clear, connected, and durable impression of the main movements of the war.

Plan of Recitation for History Class.—Have the class read the lesson assigned for the following day, first as a reading exercise. On the next day direct the class to bring their slates with them to recitation. Have them write their names at the top, and then let the teacher give out a number of questions orally, requiring the class to write the answers upon their slates. The questions given by the teacher should not be those of the text-book, as the pupil would soon recognize this and learn the answers to them. Exchange slates as soon as all pupils have written their answers. Then, giving out the first question, call upon some pupil to read the answer upon the slate which he has, and by a raising of hands ascertain how many have answered the question correctly. Answers will differ in wording and in length; but if the general facts are correct, give the pupil full credit for his answer.

Studying History by Preparing Written Papers.—In no way can the study of history be made to yield so excellent and wide results as by assigning topics to a class, requiring them to read up thoroughly, and write a careful and condensed paper upon the topic. By this plan the pupil is not getting his knowledge ready-made, but is making it for himself. He consults maps, books of reference, different text-books for the facts, and then must dwell upon them and have them clearly in mind before he is able to write a clear account. Frequently he will have to draw a map on his paper for illustration.

Edward Abbott's little "Paragraph History of the U. S." would form a good outline in American history for the teacher to work upon.

One caution should be added to this plan, and that is, the necessity of thorough oral reviews.

Dates.—In teaching history, use but few dates, but let these few be focal dates. Train pupils to locate an occurrence between these by calculation. If careful consideration is given, they will come approximately near the exact time. Some dates can be impressed easily upon the mind by some peculiarity in them. Take, for instance, 1789, the year the present constitution of the United States was adopted. By asking pupils to notice what is peculiar about the last three figures of this date, they will see the regular order of the numerals 7, 8, 9, and by this association hold it in memory.

Nearly every boy has read these lines in Dr. Holmes's "One-hoss Shay:"

"Seventeen hundred and fifty-five—
Georgius Secundus was then alive—
Snuffy old drone from the German hive.
That was the year when Lisbon town
Saw the earth open and gulp her down;
And Braddock's army was done so brown,
And left without a scalp to its crown."

In these lines are three important facts, two being upon American history, viz.: that it was in 1755 that Braddock's army was defeated (the first year of the French and Indian war), and that George the Second was then king of England.

Washington died in December, 1799. This may be of but little value as a date, but whatever its value a statement such as this would fasten it in the mind: Washington died on the last hour of the day, the last day of the week, the last month of the year, and the last year of the century.

Rome was founded 753 B.C. By remembering the reverse order of the odd numbers, 7, 5, 3, this date may be fixed in the mind.

In speaking of the Norman Conquest, the impression made by saying "The Normans landed in 1066"—ten and two sixes—is more forceful than to state merely the naked date.

The dates of the following events may be remembered by contrast: The Puritans landed in 1620; slavery was introduced into Virginia in 1619.

It must be remembered, however, that a device of this kind has its limitations and is likely to be carried too far.

Administrations of the Presidents.—Many examiners require the dates of the beginning and close of each President's administration. To acquire this easily, let scholars be able to name the Presidents in order and tell how many terms each served. Then taking the date 1789 (on which we have made a former suggestion) and adding four or eight years, as the case may be, the whole matter becomes much easier.

Drawing in History.—Fresh interest can always be given to the study of history by introducing drawing. No matter how good the engraving in the book, a picture of the Monitor and the Merrimac drawn by a pupil on the board upon a large scale invests the story of that naval battle with an additional interest.

We suggest a few of the many things that may be represented upon the board by those pupils who can draw: The flags used by the Americans in the Revolution; the Confederate flag; Continental money; Fulton's first steamboat; the firing upon the Star of the West as she attempted to carry reinforcements and supplies to Major Anderson at Fort Sumter.

Civil Government.—Such an exercise as the following may be given to the whole school, since it contains information that every well-informed person should possess. The officers and legislative bodies of the U. S. government, of the State, county, town, and school district, exercising similar powers, are placed side by side:

U. S.	State.	County.	Town.	Sch. Dist.
Congress.	Legislature.	Board of Superv's.	Town Meeting.	Dist. Meeting.
President.	Governor.	Sheriff.	Constable.	Trust. or Agt.
Sec. State.	Sec. State.	Co. Clerk.	Town Clerk.	Dist. Clerk.
Sec. Treas.	Treasurer.	Co. Treas.	Supervisor.	Collector.
Auditors.	Comptroll'r.	B'd Supervisors.	Auditors.	Trustee.

English Sovereigns.—Those who wish to fix in memory the succession of the sovereigns of England can easily do so by committing the following lines, which, though old, are useful:

"First William the Norman,
Then William his son;
Henry, Stephen, and Henry,
Then Richard and John.
Next Henry the Third,
Edwards one, two, and three;
And again, after Richard,
Three Henrys we see.
Two Edwards, third Richard,
If rightly I guess;
Two Henrys, sixth Edward,
Queen Mary, Queen Bess.
Then Jamie, the Scotsman,
Then Charles whom they slew,
Yet received after Cromwell
Another Charles too.
Next James the Second
Ascended the throne;
Then good William and Mary
Together came on.
Till Anne, Georges four,
And fourth William all past,
God sent us Victoria—
May she long be the last!"

CHAPTER X.

PHYSIOLOGY.

Practical Physiology——How to Prepare a Drop of Blood for Observation under the Microscope——An Outline of Foods——To Show the Process of Osmosis in Liquids——To Show Osmosis in Gases——To Illustrate Reflex Action ——To Illustrate Congestion——To Show the Circulation ——Action of the Heart——Structure of the Lungs——Carbonic Acid——Structure of the Heart——To Diagram the Blind Spot in the Eye——Dissection of a Rabbit or a Cat.

Practical Physiology.—There is no study which can be made of such practical value to a class as physiology; and to teach it, omitting the practical side, is to fail in the moral responsibility which one assumes in teaching such a subject. If you do not know the proper thing to do in restoring a person who has been under water several moments, find out, and see that your class understand what is necessary to be done in such a case. If you do not know what to do when an artery or large vein is severed, get some intelligent physician to inform you, and then make it clear to the class.

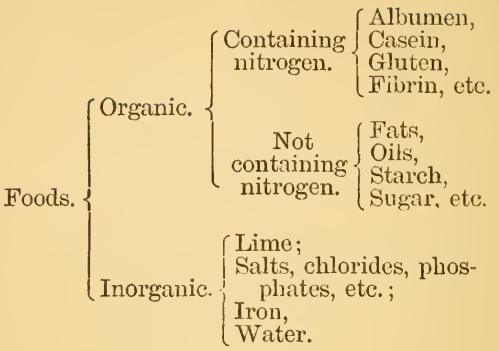
The study should include sufficient anatomy to make clear the position of the large blood-vessels and the place where the arteries come to the surface. A

teacher of physiology ought to be familiar with the relative digestibility of all the common foods, and make his pupils see how health is lost by non-attention to this subject, and by irregular and rapid eating. Do not treat the subject of ventilation as something foreign to every-day life; make your pupils enthusiastic over fresh air. Bring sharply home to each pupil the ways in which health is lost, as also the ways by which it can be made vigorous. Teaching that shows the structure of the stomach and lungs, and the way in which they act, is of but small value if it does not show how to take care of these organs.

Read chapter "The True Foundation of Science-Teaching" in Payne's "Lectures on Education."

How to Prepare a Drop of Blood for Observation under the Microscope.—A specimen of blood can be prepared for the microscope by using a slide and cover glass (a thin round glass). Take the latter in the fingers and breathe quickly on one side of it, which will thus become slightly moist. Place the cover glass upon the slide, the moist side downward. Put a fresh drop of blood on the slide at the edge of the cover glass, and a bit of blotting-paper at the other side of the same. The moisture on the underside of the glass will be drawn out into the blotting-paper, and the blood will be forced in to take its place without injury to the blood-corpuscles. The specimen is then ready for use.

An Outline of Foods.—Place the following outline upon the board, to be used as the basis for lessons on foods:



To Show the Process of Osmosis in Liquids.—Over one end of a glass tube tie securely a piece of parchment paper, and put in the tube a thick solution of sugar and water. Insert the tube in a dish of clear water, so that the surface of the sugar solution and that of the clear water shall be on a level. After standing awhile, it will be found that the liquid in the tube has risen above the level of the surrounding water, showing that some of the water has passed through the paper into the denser liquid.

To Show Osmosis in Gases.—Over the top of a glass containing nothing but air tie securely a thin rubber membrane. Place this under a bell glass containing hydrogen. The hydrogen will pass through the rubber into the denser medium, and increase the bulk of air to such an extent as to burst the rubber.

To Illustrate Reflex Action.—Pith a frog in the following way: After etherizing, to obviate unnecessary

pain to the animal, find with the finger a depression in the spinal column just below the base of the brain. Insert the point of a knife here, and sever the spinal cord. Through the opening thus made run a small awl or wire up into the brain, and destroy that organ by twisting the awl or wire about within the brain cavity. Although the brain is thus destroyed, the other functions of the body still continue. Lay the frog on the ventral surface and straighten out the legs. Let one side of the animal be tickled with a feather or pinched with a pair of pincers. The leg on that side will be drawn up and swept over the side to remove the cause of the irritation. Try the same on the other side. The other leg will go through the same motions. Pinch various parts of the body, and observe the efforts of the frog to remove the irritating object. Suspend the frog and pull down the legs. Bring a dish containing dilute sulphuric acid up under the frog, so that one of the legs will just touch it. The foot will suddenly be withdrawn. Touch the acid to the other leg. That will likewise be withdrawn. Moisten a bit of blotting-paper with acetic acid, and place it on the flank of the frog. The leg on that side will be drawn up, and swept over the flank to dislodge the paper.

To Illustrate Congestion.—Having placed a frog that has been pithed so that the web of the foot can be seen under the microscope, apply to the spot to be observed a drop of creosote. Observe the action of the blood. It will be seen to become stagnated, and blocked up in its flow, while the white corpuscles will become more numerous. Here, then, can be seen, on a small scale, the whole process of congestion. If the

irritation from the creosote be but slight, the blood will finally force its way through the blood-vessels, and the circulation be resumed.

To Show the Motion of the Cilia.—Lay open the œsophagus of a frog that has been recently pithed, and on the inner surface lay a small bit of cork. It will be seen to move slowly down toward the stomach, carried along by the cilia.

To Show the Circulation.—The circulation can be observed in the tongue of the frog, as in the web of the foot and in the lungs of the same animal.

The circulation of the blood can likewise be seen in the tail of the tadpole. If a specimen can be obtained at just the right age, nearly the whole circulatory system of the animal can be watched through its transparent skin. The heart, with the blood entering and leaving it, can be seen, as also its passage through the arteries. For the success of the observation, it is well to starve the young tadpole for a day or two previous to examining it. As the animal grows older, its skin loses its quality of transparency. The tadpole may be rendered passive by placing it in water and heating to about 112 degrees.

Action of the Heart.—A good experiment to offer to the class in physiology is to open the thoracic cavity of a frog, previously rendered insensible, when will be seen the action of the heart and the lungs collapsed. If the heart be carefully removed and placed on a board in a warm place, it will beat for some time.

Structure of the Lungs.—To show the structure of the lungs, insert a small tube in the trachea of a dead frog and inflate the lungs. Tie up the trachea to prevent the escape of the air, and hang in a warm place to dry. On cutting it open, after being thoroughly dried, the air-cells can be studied to good advantage.

Carbonic Acid.—The show the presence of carbonic acid in expired air, take a small glass tube or the stem of a clay pipe, and through it breathe slowly into a glass of lime-water. A white precipitate will be formed, which is carbonate of lime, formed by the carbon of the gas and the lime in the water.

Structure of the Heart.—The heart's action can be studied to advantage by the use of the frog, as shown in another place. But to show the structure of this organ, the heart of a larger animal is necessary. Get a butcher to save you one from a sheep, and while it is still fresh cut it open and exhibit it to the class. The working of the valves can be readily shown, and, in general, the students will get a much better idea of the subject from such an inspection than from a multitude of diagrams. Have the students draw carefully upon paper what they see.

To Diagram the Blind Spot in the Eye.—Draw several horizontal, parallel lines about a quarter of an inch apart. Make a cross at one end of the line. Close the left eye, and look steadily at the cross with the right eye. Now run the point of the pencil along

the upper line. At a certain distance along the line, the point will become invisible, and a little further on will again appear. Make a dot at the points of disappearance and reappearance. Do this on a number of the lines. It will be found that the dots have enclosed a space which, if the lines are near together, and the experiment be carefully performed, will give a very accurate outline of the blind spot in the eye. It will be found to differ in shape in different members of the class. It should be remembered that the eye is to be kept at a uniform distance from the page throughout the experiment.

Dissection of a Rabbit or Cat.—The teacher who desires to do thoroughly good work in teaching physiology should not fail to make a dissection before the class of a rabbit or a cat. In no other way can such a vivid representation of the organs of the body and their functions be brought before the pupil's eyes. You may describe accurately the action of the heart, but your class will never fully realize what it means until a heart has been *seen in action*. There need be no hesitancy because of the specious arguments against vivisection: an animal under the influence of ether is dead to pain. When a dissection is to be made, let the animal, either a rabbit or a cat, be placed in a close box, in which has been placed a sponge, or cloth, moderately wet with ether. It is convenient to have a glass window in the top of the box, so that one may know at once when the anæsthetic has taken effect. Do not keep the box so tightly closed as to smother the animal. When thoroughly insensible, remove the animal from the box. Have some one keep the sponge

or cloth near the animal's nose continually. Be particular about this. Stretch the animal upon its back on a board, and draw all its feet out and fasten them to the sides of the board with strings. Part the fur, and make an incision through the skin upon the median line from the throat across the thoracic and abdominal cavities, but do not cut through into the thoracic cavity in the first of the dissection, as that would cause the lungs to collapse, when the functions of life would shortly end. Make an incision into the abdominal cavity below the diaphragm, and observe the position of the stomach, liver, pancreas, kidneys, bladder, large and small intestines. If there is food in the animal's stomach, notice the congested appearance of that organ. Observe carefully the peristaltic action of the intestines—the instant of rest followed by the peculiar writhing motion which marks the function.

With a thin scalpel or small knife, carefully detach a small bit of the thin, almost transparent membrane which invests the intestines. This is the peritonæum which slings the intestines to the walls of the abdominal cavity. Notice the action of the diaphragm as it expands and contracts with every breath. Carefully raise the intestines from their position, and find the large blood-vessels that follow the course of the spinal column down from the heart. Distinguish between the veins and the arteries. If an artery is cut in your work, pick it up at once with pincers and tie it. Notice the white appearance of the cut end. Cut through into the cavity of the thorax and notice the collapsed lungs —their color, form, and general consistency. Notice their covering. Raise the lungs carefully, and notice the working of the heart. Try to distinguish the two

impulses of a single beat. Observe carefully the auricles and the apex (the lower point). Notice that it is the striking of this point against the wall of the thorax which gives the impression of a beat when the hand is held over the heart. Distinguish the pericardium, or sac in which the heart is contained. Trace the aorta and the various veins and arteries connected with the heart, naming the most important. Cut open the covering of the throat, laying bare the trachea. Observe the hard rings nearly encircling it, and behind this the œsophagus. Follow the trachea down to the bronchi. Trace the large veins of the throat. When all these points have been carefully studied, remove the heart by cutting away its attachments, and place it in water slightly warm. It will beat for some time. If placed in cold water, it will stop beating, but on being returned to the warm fluid it will resume its beats if it still retains its vitality; that is, if the experiment has been carefully made, and the heart has not been too long removed from the body.

In cutting into the thoracic cavity, the sternum will have to be removed. This may be done by severing the attachment of the ribs with stout shears.

To show the action of the lungs in breathing, remove the lungs and trachea intact. Place them in a large empty bottle, with the trachea projecting through a hole in the cork. Render the bottle air-tight by means of sealing-wax placed about the trachea and the edges of the cork. Place a small bellows, or rubber bulb, over the open end of the trachea. In this way the lungs can be inflated, when the air in the bottle will become compressed. Remove the pressure of the bulb, or bel-

lows, and the air in the bottle will expand and drive out the air from the lungs, which will then be in a state of collapse. Repeat this regularly fifteen times per minute, and a very successful exhibition of the action of the lungs in breathing will be afforded.

CHAPTER XI.

SEAT-WORK.

What is Gained by Seat-work——Copying Reading Lessons ——Thinking of Words——Building up Words——Suggestions for Seat-work——Dissected Pictures and Maps——Number—— Illustrated Examples —— Geography——Anagrams——Blackboard for Lowest Grade——Derivatives from Primitive Words.

What is Gained by Seat-work.—Would you reduce discipline to a minimum of effort, keep your scholars busy, taking great care that there be variety in their work. Have you yet, do you think, fully realized how much there is in this?

Copying Reading Lessons.—Direct pupils to copy carefully upon their slates the reading lesson just finished, or the lesson to be read to-morrow. See that there is no hurried work. Inspect all work and approve every effort that shows the pupil has tried.

In this copying the pupil is aiding himself in spelling, by impressing the forms of the words upon his mind; he is getting practice in writing; he is indirectly learning to capitalize and punctuate; and, besides this, what he does is of direct value to him in reading.

Thinking of Words.—To afford variety in seat-work, direct pupils to make on their slates a list of all words they can think of that have three letters in them; on another day, a list of words having four letters only. The number may be increased, as the pupils advance in knowledge.

Building Up Words.—For pupils in the primary class write upon the blackboard parts of words as follows:

at	an	all	ad	eat	ell	and
at	an	all	ad	eat	ell	and
at	an	all	ad	eat	ell	and
at	an	all	ad	eat	ell	and
at	an	all	ad	eat	ell	
at	an	all	ad	eat	ell	

Direct the class to form words by putting one or more letters before each part. Other parts of words will readily occur to the teacher.

Suggestions for Seat-work.—Write short sentences on the blackboard, and require them to be copied.

Have the Roman letters and numbers of the pages in the reading-book copied.

Shoe-pegs cost ten cents a quart. They can be easily colored by soaking them in any of the aniline dyes. Distribute these to the smallest pupils and let them form designs, and copy the designs upon their slates. Pupils may also form little arithmetical examples upon their desks.

Upon pieces of card-board copy examples to be

worked, tables to be filled out, words and sentences to be copied.

Write a neat little letter upon the blackboard, and let pupils copy it on their slates.

Take card-board and cut it up into half-inch squares. Print letters on these squares, and let pupils form words with these letters. As soon as a word is formed, it may be copied on the slate.

Place a number of red, blue, and yellow inch squares of bristol-board in envelopes, and, distributing these, have children form designs, each following his own fancy.

Bring in leaves of different shapes, distribute these, and let children place them on their slates and draw an outline by tracing around them.

Give pupils geometrical forms cut from card-board, and let them trace the outlines of these upon their slates.

Dissected Pictures and Maps.—Another way in which to interest and keep small children busy is to take pictures from the illustrated papers, being careful always that the pictures are meritorious, and paste them upon pasteboard; then cut the whole into squares, triangles, etc. Give these parts to the pupil and let him properly re-arrange them. By using maps in the same way, considerable knowledge of geography will be imparted.

Number.—Let the pupil arrange and add such numbers as will give successively as right-hand figures 1, 2, 3, 4, etc. Thus:

9+2	Give 1 as	1+1	Give 2 as	2+1	Give 3 as
8+3	right-	9+3	right-	9+4	right-
7+4	hand	8+4	hand	8+5	hand
6+5	figure.	7+5	figure.	7+6	figure.

Put tables upon the board like the following, and let pupils supply answers at their seats:

$4 + \quad = 9$	$\frac{1}{2}$ of $4 =$
$5 \times 6 =$	$\frac{1}{3}$ of $12 =$
$14 - 9 =$	$\frac{1}{4}$ of $8 =$
$20 \div \quad = 5$	$\frac{3}{4}$ of $12 =$
$36 - 9 =$	$\frac{2}{3}$ of $9 =$
$46 \div \quad = 7$	$\frac{4}{4}$ of $16 =$
$7 \times 8 =$	$\frac{1}{3}$ of $6 =$

Direct pupils to write on slates what is necessary to make a full table.

\$10 + \$6 =	× = 8
9c. + 4c. =	+ = 7
6 qts. + 9 qts. =	− = 11
2 qts. + 3 pts. =	÷ = 3
2 yds. + 2 ft. =	× = 18
1 qt. + $1\frac{1}{2}$ gal. =	+ = 13
5 in. + $1\frac{1}{4}$ ft. =	− = 17
	÷ = 6

Illustrated Examples.—Set pupils to making original examples and illustrating them, or give them the examples to illustrate; as, add $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{2}$, $\frac{3}{8}$, $\frac{1}{2}$.

Ans. $1\frac{5}{8}$.

If a daisy has 21 leaves and 9 fall off, how many are left?

21
9
—
12 left. Ans. 12.

If a forget-me-not has 6 petals, how many petals will 5 forget-me-nots have?

6
5
—
30 petals.

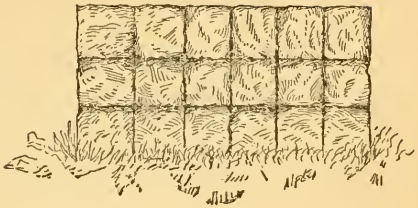
$3\frac{1}{2}$ = how many halves?

Ans. $3\frac{1}{2} = \frac{7}{2}$.

In a house showing eight windows, with twelve panes in each window, how many panes are seen?

12
8
—
96 panes.

What will a stone wall cost 18 ft. long and 9 ft. high, at $2.00 a sq. yd.?



18 ft. = 6 yds.
9 ft. = 3 yds.
—
18 yds.
$2.00
18
—
$36.00 Ans.

Geography.—Rule the board for the number of columns desired, and write at the head the subject; as, rivers, islands, etc. At the head of each column write the headings suggested below. One or two examples may be written out, to give the pupil an idea of what is desired; then he can fill the columns to any length. Below are some suggestions for rivers, islands, gulfs, bays, etc.

RIVERS.

NAME.	SOURCE.	DIRECTION.	OUTLET.
Kennebec.....	Moosehead Lake.	South.....	Atlantic Ocean.
Mississippi.....	Itasca Lake.....	South.....	Gulf of Mexico.

ISLANDS.

NAME.	SITUATION.	SURROUNDED BY.	BELONGS TO.
St. Helena.....	West of Africa...	Atlantic Ocean..	England.

ISTHMUSES.

NAME.	WHAT CONNECT.	WATERS SEPARATED.
Panama	North America and South America.	Caribbean Sea and Pacific Ocean.

GULFS, BAYS, AND SEAS.

NAME.	WHERE.	TRIBUTARY TO.	BY.
Baffin Bay	N. of N. A	Atlantic Ocean	Davis Straits.
Red Sea	N. E of Africa	Indian Ocean	Bab-el-Mandeb.
Gulf of Mexico	S. of U. S	Atlantic Ocean	Florida Straits.

MOUNTAINS.

NAME.	WHERE SITUATED.	HIGHEST PEAK.
White	New Hampshire	Mt. Washington.

LAKES.

NAME.	WHERE SITUATED.	OUTLET.
Erie	Between U. S. and Canada.	Niagara River.
Itasca	Minnesota	Mississippi River.

CAPES, PROMONTORIES, AND PENINSULAS.

NAME.	WHERE.	PROJECTS INTO.
Lower California	West of Mexico	Pacific Ocean.

Anagrams.—A device for seat-work that will be found both interesting and profitable is the making of anagrams. Select a word of moderate length made up about equally of vowels and consonants, and ask the pupils to form as many new words as possible, using only a part, or all, of the letters found in the original word; forming in the first place words that begin with the first letter of this word, then those beginning with the second letter.

Blackboard for Lowest Grade.—If you have a primary department in your school, you should have a blackboard that will accommodate ten or twelve pupils, giving about eighteen inches of running space to each pupil. Have the board low enough for them to reach; and if this is not possible, have a platform built so that the little ones can reach the board, which we here suppose is above wainscoting a yard high. Divide the board into spaces by painted lines, put an eraser and crayon at each place, and send your little ones in groups to this board. Don't fret over them. Let them alone. If a pupil is disorderly, deprive him of the privilege of going to the board. When your little ones are at the board, go on with your other work, and let them mark away as they want to. All sorts of fantastic drawings will be made. But the rest it gives the little ones! the rest it gives the teacher! and a thousand times more than all is the play it gives to the little folks' imaginations.

Derivatives from Primitive Words.—A valuable drill in spelling can be made by putting exercises like the following upon the board and directing pupils to form the words at their seats;

Make these words end in *ing:*

come	break	run	fail
see	lift	give	forget
fall	upset	fly	dig
get	hit	knit	shut
spin	spoil	swim	win
work	write	wring	quit

Make these end in *ed:*

awake	listen	dance	knot
start	point	stay	drop
hop	wrap	lag	slam

Add *ly* to these words:

real	true	whole	slow
even	hard	wide	able
hasty	general	single	separate
ill	equal	angry	pretty

Add *en* to these words:

short	sweet	fat	ripe
rot	fall	sharp	flat
awake	bid	eat	forsake
rid	shake	take	length

CHAPTER XII.

DRAWING.

Drawing from Models——A Harmful Practice——Drawing from Nature——A Concession——Shading——Diagrams——Designing——Diagrams for Designing.

Drawing from Models.—We give herewith illustrations of a number of models, with which any teacher may provide himself, as many of them he can make, while the rest can be obtained from any mechanic of ordinary ability at a trifling cost. Begin with the simplest forms, as the cubes and the other rectangular solids, placing the model in such a position that the lights and shadows will be brought out sharply. Teach the pupil to regard the form of the object as made up of these lights and shadows, rather than direct his attention to an imaginary line bounding the figure. Do not have the outline of these models drawn, but let the pupil bring out their form wholly by shading. There are no lines in nature,—the sharp edge of a cube, on which the light falls strongly, being only the abrupt termination of a shadow. More satisfactory results can be obtained from teaching drawing in this way than from the ordinary custom of drawing an outline. Do not expect too much at first; perhaps the pupil has not been accustomed to look at an object in this way, but he will soon learn that the only things that give form to any object are the lights and shadows, after which

he will be prepared to make advancement,—and such advancement as really advances.

After the model has been copied from one point of view, change it to other positions in successive lessons. We have numbered the models, and combinations of models, to show the order in which they should be given to a class. We have suggested in the illustrations a few of the combinations which can be used when the pupil has acquired facility in drawing simple forms; but the combinations which any teacher can form for himself are almost endless. Care should be taken, however, in combining the simple solids, that difficulties be presented gradually to the pupil. Make at each lesson the combinations a little more difficult to draw.

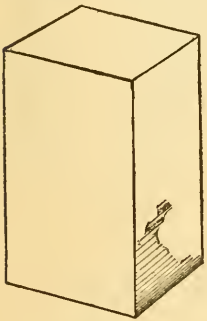
A Harmful Practice.—Do not allow your pupils to copy pictures, as those who gain their experience from this kind of work are usually at a loss to know what to do when they come to copy directly from nature.

Drawing from Nature.—When the pupils have gained facility in copying, in various positions and combinations, the models here represented, select for them simple objects directly from nature, as a jagged rock, a knotted piece of wood, a branch of a tree, a simple flower, or fruit of different kinds.

A Concession.—While we regard the plan of drawing without outlines as the one that will yield the most satisfactory results, yet, if this plan seems impracticable to any teacher by reason of not having learned to use the pencil in that way himself, let outlines be

used; but encourage the pupil to depend upon them as little as possible.

Shading.—In the illustrations which are given, but little attempt has been made at shading, as that could be represented only by elaborate engraving. To bring out the full values of the lights and shadows when copying, let a piece of drab-colored cloth drawn tightly over a wooden frame be placed behind the model.



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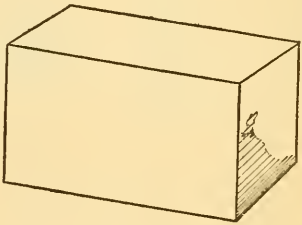

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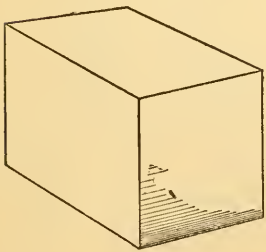

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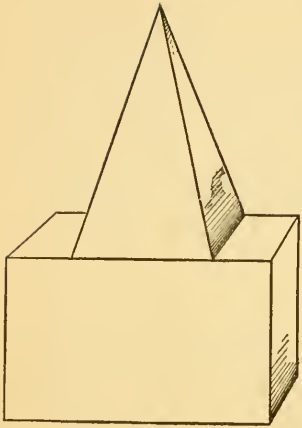

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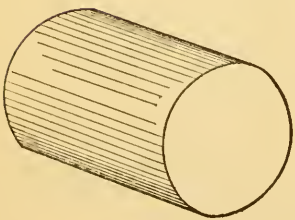

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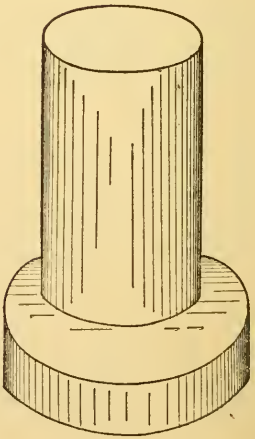

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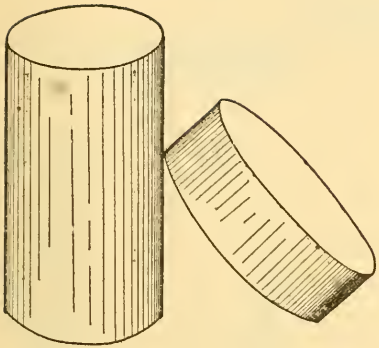

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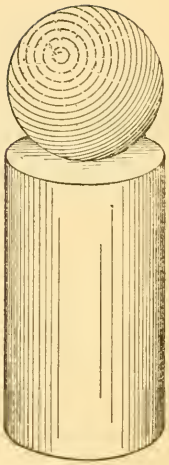

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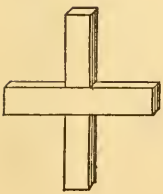

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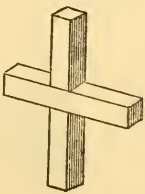

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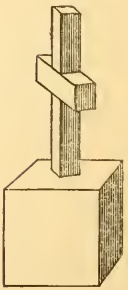

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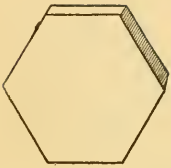

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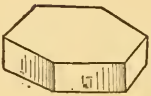

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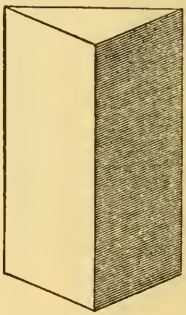

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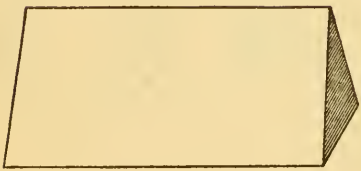

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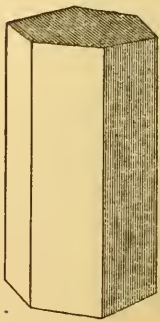

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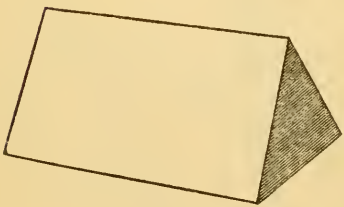

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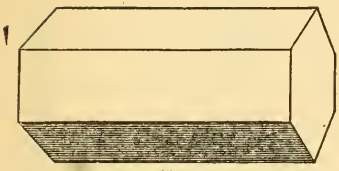

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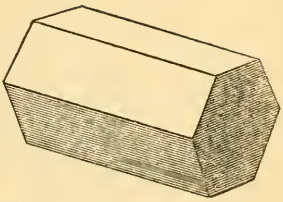

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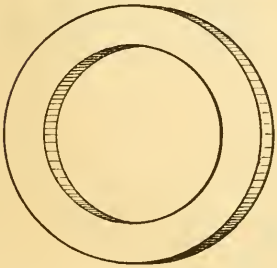

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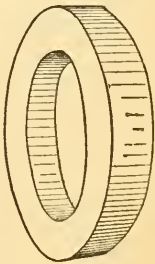

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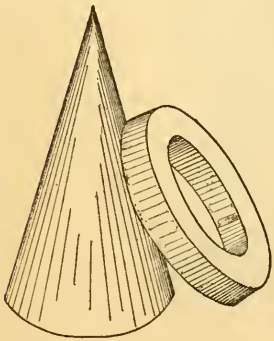

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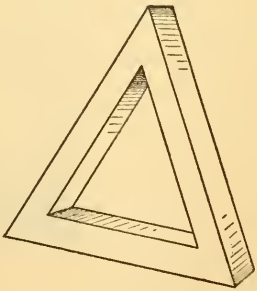

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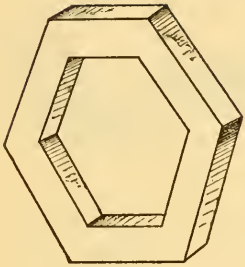

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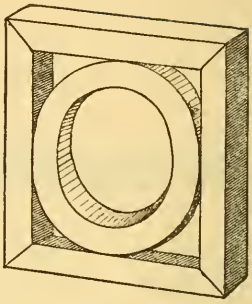

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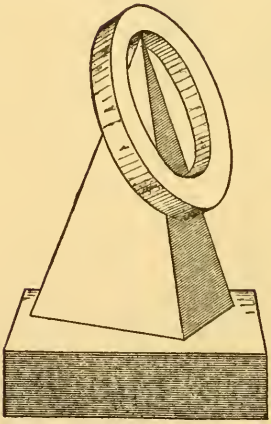

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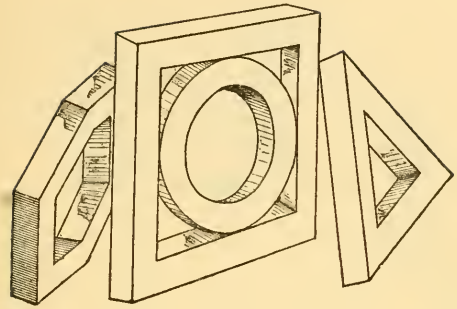

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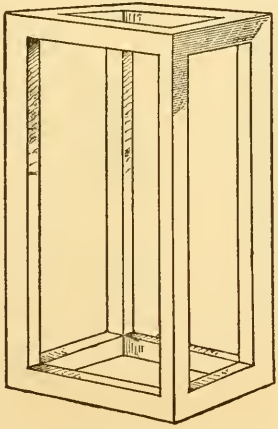

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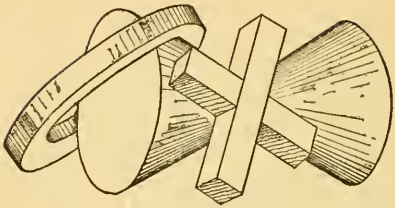

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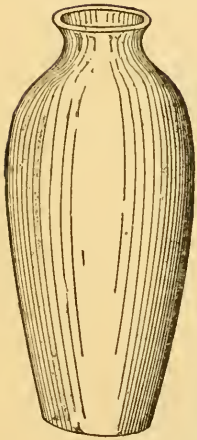

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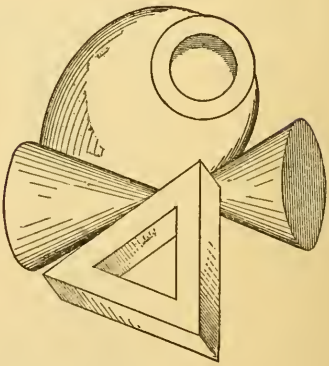

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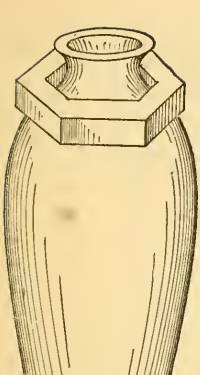

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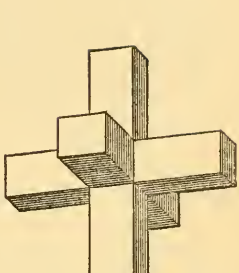


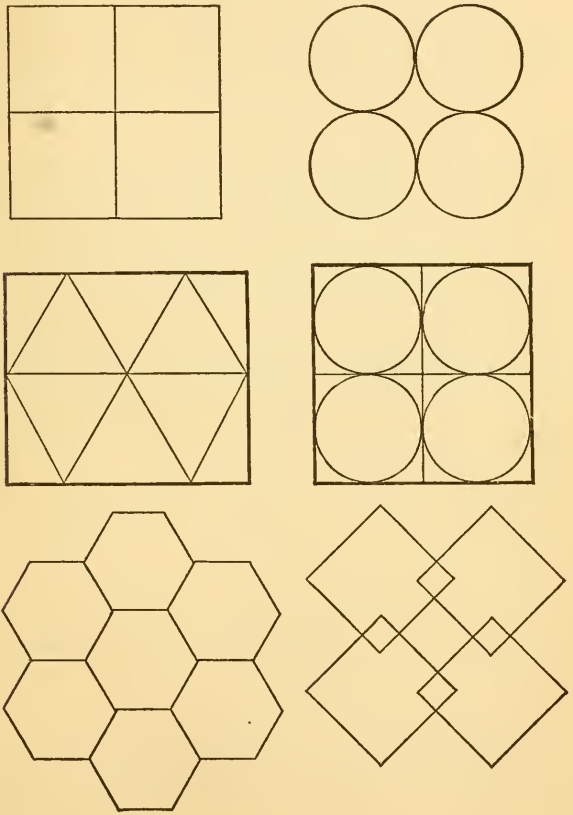
37.

Designing.—Excellent work in designing can be done by the following plan: Cut from pasteboard a number of squares, circles, equilateral triangles, hexagons, and even octagons. The squares should be about two inches on a side, and the circles have the same length for their diameter. Show pupils that by placing the pasteboard figures upon tea-paper, and marking around them with lead-pencil, a block is formed, which gives them a geometrical basis for a design. Let the pupils fill in the figures as their invention suggests.

In nearly every toy-shop a little box of French crayons of different colors can be had for five cents. With these let pupils color their designs. Color delights a child's eye, and his interest in designing will

be greatly enhanced by the use of these crayons. To prevent the color from blurring, dissolve a little white shellac in alcohol, and blow it over the design with an atomizer. The colors are thus firmly fixed. To incite interest, pin up the best designs in the schoolroom where they may be seen by all the school.

The diagrams given below illustrate and suggest the geometrical bases for designs:



CHAPTER XIII.

PENMANSHIP AND APPARATUS.

Order in which Letters Should be Taught——Suggestions——Criticism——Primary Writing——Charts Adapted to One's Need——An Ink-well Filler——A Wash-bottle for Slates——A Substitute for Compasses——Selecting a Thermometer——A Cabinet of Productions——Tracing-stencil——Slating——The Hectograph——Colored Crayons.

Order in which Letters Should be Taught.—In teaching penmanship the following order in which the capitals should be taught is one founded upon wide experience: *A, N, M, T, F, K, C, H, P, B, R, S, L, J, V, W, Y, U, G, O, L, E, D, Q, X, Z.* In this way all the letters that are similarly formed will be taught at once. The following is the order for small letters: *n, m, u, i, w, r, e, a, o, c, s, v, x, t, d, l, b, h, k, y, j, g, q, p, f, z.* After the letters have all been formed,

the teacher should lose no time in building words and sentences. In the latter the capitals can be taught, though work with these is much slower than with small letters. Of course the small letters should be taught first, and such words as *man*, etc., should be written as soon as the single letters forming the words have been learned.

Suggestions.—In order to secure good results in penmanship, the boards should be ruled with six lines, as well as the slates, and the letters formed in proper proportions. The slates should be furnished by the school. Thorough inspection and approval of the work by the teacher are necessary. The children should be incited to take the utmost pains with the work. Let it be understood that no one can write who will not do this. Very soon they will come to have a pride in their work.

This plan should be used for the first two years.

In the third year the slates and boards should be ruled, but with the second and fifth lines omitted. Thorough inspection and approval of all work should be practised throughout the year. It is specially im-

portant that the pupil do not form *two styles* of writing. In doing this his progress is greatly hindered, and much of his previous drill is rendered useless. In the second year, practice-paper and lead-pencils may be used; in the third year, pen and ink. For ruling a blackboard with the six lines used in writing, have the lines painted on the board, or use a frame made of six slats where it is necessary to rule in crayon. A similar frame, on a smaller scale, can be used for ruling slates. Place this on the slate, and draw lines with the point of a file or an awl.

As a matter of convenience and economy, add a little water from time to time to the ink-wells, as the water in the ink evaporates. If this is not done, the ink will become too thick.

Criticism.—In teaching writing, as in many other branches, criticism is invaluable. Occasionally place a word or letter on the board, and ask questions about it. Or take the work of a number of pupils and ask the class to criticise. In this way their attention will be brought sharply to any defects that may exist.

Teach pupils to criticise their own work in writing also, and when they discover a fault to work until the fault is overcome. The teacher must pass among his pupils, continually assisting them in this work of criticism, as their judgments will often be found incorrect. The formation by the learner of the habit of criticism is of the highest value in acquiring a fluent and even handwriting. Constant practice is, of course, necessary; but to make this the most effective, there should be continual comparison of the incorrect with the correct form.

Primary Writing.—It is of the utmost importance that the teacher be a good writer before he attempts to teach the subject. If you are not proficient in this matter, persevering practice will make you so. The pupils should work from copies placed upon the board by the teacher, and not from charts, as there is necessarily a certain stiffness about these. Do not make the time of practice too long, as the pupils will thus become wearied and so lose interest. A few moments twice a day will produce better results than the same length of time occupied at one sitting.

Charts Adapted to One's Need.—Any teacher at all apt at drawing or copying may make for himself charts to aid in his work. Stout manilla-paper may be used, and, if necessary, colored crayons. It is a fact recognized by all teachers that no text-book is perfectly adapted to one's work. The teacher, therefore, who is progressive seeks to supplement the text-book. Charts made by himself will stand in good stead for a part of this supplemental work. Take, for instance, the subject of arithmetic: examples, problems, diagrams for teaching mensuration, are some of the things that may be put upon charts. Then, in history, plans of battles drawn upon a larger scale, make movements and positions more prominent. In physiology, in physics, in botany, in astronomy, in book-keeping, there are often found better diagrams in other text-books than there are in the text-books adopted; these, as well as the excellent diagrams in books not accessible to the class, can be drawn upon manilla-paper in the way we have suggested above.

It involves too much work, some may object. Yet

can it not be said justly that such an outfit ought rightfully to be expected of the teacher? Take the case of a carpenter. What is his outfit? A chest of tools, by no means an inexpensive equipment, and, in addition, fifteen or twenty dollars a year is required to make up the loss from wear and tear. Is anything similar to this required of the average teacher? Has he any right, therefore, to complain of the work involved in securing for himself an equal equipment?

An Ink-well Filler.—A simple and unequalled ink-

well filler is shown in the accompanying figure. A stopper is fitted to an ordinary quart ink-bottle, and through this are passed two pieces of glass tubing, easily bent in the manner shown in the figure, by heating

them in the flame of an alcohol lamp. To the piece of tubing reaching nearly to the bottom of the bottle is attached a piece of quarter-inch rubber tubing, which can be had at any drug-store. On blowing into the short tube the ink will be forced out through the rubber tube, and by pinching the rubber tubing near the end the flow of ink can be stopped at will. If one is careful in pinching the end, not a particle of ink need be dropped, and on this account the filler does its work in a cleanly way. It is only necessary to blow into the short tube but once to start the flow, as the long tube acts as a siphon. To stop the flow of ink, lift the rubber tubing up so that the ink in it will flow back into the bottle.

A Wash-bottle for Slates.—A wash-bottle may be made by inserting a piece of sponge into the neck of a small bottle as a stopper, leaving part of the sponge without the bottle, which has previously been filled with water.

A Substitute for Compasses.—Take a piece of pasteboard or thick paper and make a hole in one end, and in the other end a number of holes at varying distances. A pin at one end and the point of a lead-pencil inserted in one of the holes at the other end completes the substitute.

Selecting a Thermometer.—A thermometer should be in every schoolroom, and the temperature kept as near 68° as possible. On windy days, when the cold is searching, the temperature should be 70°.

In selecting a thermometer, pick out a half-dozen

which vary but little from one another. Find the average temperature of the six, and purchase the one differing the least from this average. You will then be likely to secure an instrument that will indicate approximately correct temperature. It is nearly impossible to get a perfectly accurate instrument at a low price.

A Cabinet of Productions.—For use in geography classes collect and arrange in a case, vegetable and mineral products, as cotton, flax, vegetable ivory, different woods, coffee berries, indigo, rice in the hull, mace, cochineal, vanilla, cinchona-bark, saltpetre, caoutchouc, gypsum, hemp, iron ore, copper ore, lead ore, graphite, etc. When studying a locality noted for any of these productions, have them before the class.

Tracing-stencil.—A stencil that will furnish a large number of copies of objects, words, etc., in outline dots, for pupils to draw, can be made by tracing the pattern on paper, then with an unthreaded sewing-machine follow the lines. Place this upon the drawing-paper and rub powdered crayon over the holes thus formed; an outline copy in dotted lines will be found underneath, which the pupil can trace with pencil. This same plan can be used in numberless ways that will readily occur to the teacher.

Slating.—Take fine rotten-stone, lamp-black, alcohol, and shellac. If this is not practicable, take a pound of glue and dissolve it in five quarts of water, add enough lamp-black to make a good body, together with a small quantity of alcohol.

The Hectograph.—Few teachers recognize the service which a hectograph may be to them in their work. Examination questions, test problems, etc., suggest the frequent need of such a help.

Any one, with but little trouble, can make one for himself, which will last for a long time, and prove a great saving of time and labor. The usual manner of making is to take two parts of glue and one of glycerine. The glue should be dissolved in water. While the glue is still hot add the glycerine, and boil until it is of the proper consistency.

Another plan is to take of glue four parts, glycerine two parts, barium sulphate, finely powdered, one part (one part of kaoline may be used instead), water fifteen parts. A rectangular tin pan, half an inch deep, will hold the mixture. Aniline ink should be used.

Colored Crayons.—These can be made from the white school crayon by boiling in any of the aniline dyes, dissolved in hot water. The crayons should be kept from the sunlight, as they fade in it.

CHAPTER XIV.

BIBLE READINGS.

September—July.

Bible Readings.—It comes very near the truth to say that the great body of teachers who are called upon to read some selection of Scripture to their schools each morning have no collection of passages marked out, but pick up their readings from morning to morning in a hurried and desultory way. Observation testifies that in hundreds of cases blunders are made and chapters unsuitable for school use are read.

The reading of a chapter in this haphazard way of selecting can be nothing other than indifferent. And herein is an opportunity lost; for there is great influence and majesty in the Scriptures when read well and impressively.

The passages here arranged for each day and week of the school-year have been carefully selected. Except in a few instances, where the thought of a chapter would be mutilated by giving a part only, the readings are short, as readings from the Bible should be in the schoolroom. The words difficult of pronunciation have been noted, and are correctly marked under the selection in which they occur.

SEPTEMBER.

FIRST WEEK.

MONDAY.

The Gospel of St. John, Ch. I. 1st to 19th verse.
The Divinity of Christ.

TUESDAY.

St. John, Ch. I. 19th to 35th verse.
John's Testimony of Christ.
Bethabara = Bĕth'ăb'a-ra.

WEDNESDAY.

St. John, Ch. I. 35th verse to end.
Andrew and Peter called.
Bethsaida = Bĕth'sā'i-da.

THURSDAY.

St. John, Ch. II. 1st to 18th verse.
The Marriage in Cana.

FRIDAY.

St. John, Ch. II. 18th verse to end, and Ch. III. 25th verse to end.
John testifieth of Christ.

SECOND WEEK.

MONDAY.

St. John, Ch. IV. 1st to 27th verse.
The Samaritan Woman at the Well.

TUESDAY.

St. John, Ch. IV. 27th to 43d verse.
Christ's Zeal for God's Glory.

WEDNESDAY.

St. John, Ch. IV. 43d verse to end, and to 10th verse of Ch. 5.
Christ's Healing.

THURSDAY.

St. John, Ch. V. 10th to 39th verse.
Christ declares Himself to the Jews.

FRIDAY.

St. John, Ch. V. 39th verse to end, and to 16th verse of Ch. VI.
Five Thousand fed with Five Loaves and Two Fishes.

THIRD WEEK.

MONDAY.

St. John, Ch. VI. 16th to 41st verse.
Christ reproves His Carnal Followers.

TUESDAY.

St. John, Ch. VI. 41st to 66th verse.
The Bread of Life.

WEDNESDAY.

St. John, Ch. VII. 1st to 19th verse.
Christ teaches in the Temple.

THURSDAY.

St. John, Ch. VIII. 12th to 31st verse.
Christ the Light of the World.

FRIDAY.

St. John, Ch. VIII. 42d verse to end.
Reproving the Unbelieving Jews.

FOURTH WEEK.

MONDAY.

St. John, Ch. IX. 1st to 26th verse.
A Blind Man's Sight restored.

TUESDAY.

St. John, Ch. X. 1st to 19th verse.
The Good Shepherd.

WEDNESDAY.

St. John, Ch. X. 19th verse to end.
Christ's Unity with the Father

THURSDAY.

St. John, Ch. XII. 1st to 9th verse, and 23d to 37th verse.
Anointing Jesus' Feet, and the Father testifieth of Christ.

Spikenard = Spĭk'nard.

FRIDAY.

St. John, Ch. XII. 37th verse to end.
Unbelief of the Jews.

Esaias = E-zā'yas.

OCTOBER.

FIRST WEEK.

MONDAY.

St. John, Ch. XIII. 1st to 18th verse.
Christ teaches Humility.

TUESDAY.

St. John, Ch. XIII. 18th to 36th verse.
Christ foretells His Betrayal.

WEDNESDAY.

St. John, Ch. XIV. 1st to 15th verse.
Promise of the Comforter.

THURSDAY.

St. John, Ch. XIV. 15th verse to end.
Promise of the Comforter.

FRIDAY.

St. John, Ch. XV. 18th verse to the 8th verse of Ch. XVI.
Persecution of Disciples foretold.

SECOND WEEK.

MONDAY.

St. John, Ch. XVII. entire.
Christ prays for His Disciples.

TUESDAY.

St. John, Ch. XVIII. 1st to 25th verse.
Judas Betrays Christ.

Malchus = Măl'kus.
Caiphas = Cā'ya-fas.

WEDNESDAY.

St. John, Ch. XVIII. 28th verse to end.
Jesus accused before Pilate.

THURSDAY.

St. John, Ch. XIX. 1st to 25th verse.
Crucifixion of Christ.

Gabbatha = Găb'ba-tha.
Golgotha = Gŏl'go-tha.

FRIDAY.

St. John, Ch. XIX. 25th verse to end.
Burial of Christ.

Cleophas = Clē'o-phăs.
Magdelene = Măg'da-lē'ne.
Aramathea = Ar-a-ma-the'a.

THIRD WEEK.

MONDAY.

St. John, Ch. XX. 1st to 19th verse.
Mary Magdalene comes to the Sepulchre.

TUESDAY.

St. John, Ch. XX. 19th verse to end.
Christ appears to His Disciples.

WEDNESDAY.

St. John, Ch. XXI. 1st to 15th verse.
Miraculous Draught of Fishes.

THURSDAY.

St. John, Ch. XXI. 15th verse to end.
Christ's Charge to Peter.

FRIDAY.

Acts, Ch. IX. 1st to 10th verse.
Saul's Conversion.

FOURTH WEEK.

MONDAY.

Acts, Ch. IX. 10th to 23d verse.
Paul preaches at Damascus.

TUESDAY.

Acts, Ch. IX. 23d to 32d verse.
The Jews lie in Wait for Paul.

WEDNESDAY.

Acts, Ch. XII. 1st to 20th verse.
An Angel liberates Peter.

THURSDAY.

Acts, Ch. XIII. 42d verse to end.
Paul and Barnabas persecuted.

FRIDAY.

Acts, Ch. XVI. 9th to 25th verse.
Paul converteth Lydia. Paul and Silas imprisoned.

NOVEMBER.

FIRST WEEK.

MONDAY.

Acts, Ch. XVI. 25th verse to end.
Paul and Silas released from Prison.

TUESDAY.

Acts, Ch. XVII. 1st to 16th verse.
Paul preached at Thessalonica and Berea.

WEDNESDAY.

Acts, Ch. XVII. 16th to 34th verse.
Paul's Discourse on Mars Hill.

THURSDAY.

Acts, Ch. XIX. 21st verse to end.
The Uproar at Ephesus.

FRIDAY.

Acts, Ch. XX. 16th verse to end.
Paul's Charge to the Elders of Ephesus.

SECOND WEEK.

MONDAY.

Acts, Ch. XXI. 15th to 37th verse.
Paul's Apprehension in the Temple.

TUESDAY.

Acts, Ch. XXI. 37th to 22d in XXII.
Paul's Address to the Jews.

WEDNESDAY.

Acts, Ch. XXII. 22d to 12th in XXIII.
Paul pleads his Cause.

THURSDAY.

Acts, Ch. XXIII. 12th verse to end.
Paul sent to Felix.

Lysias = Lĭsh'ĭ-as.
Antipatris = An-tĭp'a-trĭs.
Cilicia = Sĭ-lĭsh'ĭ-a.

FRIDAY.

Acts, Ch. XXIV. entire.
Paul's Defence before Felix.
Porcius = Pôr'shĭ-us.

THIRD WEEK.

MONDAY.

Acts, Ch. XXV. 1st to 13th verse.
Paul appeals unto Cæsar.

TUESDAY.

Acts, Ch. XXV. 13th verse to end.
Festus declares Paul Innocent.
Bernice = Ber-nī'ce.

WEDNESDAY.

Acts, Ch. XXVI. entire.
Paul before Agrippa.

THURSDAY.

Acts, Ch. XXVII. 1st to 27th verse.
Paul's Voyage.

Aristarchus = Ar'is-tăr'kus.
Thessalonica = Thĕs'sa-lo-nī'ca.
Pamphylia = Pam-phyl'i a.
Lycia = Lĭsh'ĭ-a.
Cnidus = Nī'dus.
Lasea = La-sē'a.

FRIDAY.

Acts, Ch. XXVII. 27th verse to end.
Paul's Shipwreck.

FOURTH WEEK.

MONDAY.

Acts, Ch. XXVIII. 1st to 17th verse.
Paul arrives at Rome.

Melita = Mĕl'i ta.
Rhegium = Rhē'gi-ŭm (rē'-).
Puteoli = Pu-tē o-lī.
Appii = Ap'pi-i.

TUESDAY.

Acts, Ch. XXVIII. 17th verse to end.
Paul commends his Calling to the Romans.

Esaias = E-zā'yas.

WEDNESDAY.

1 Corinthians, Ch. II. entire.
Christ the only Foundation.

THURSDAY.

1 Corinthians, Ch. XIII. entire.
Excellence of Charity.

FRIDAY.

1 Corinthians, Ch. XV. 1st to 24th verse.
Of Christ's Resurrection.

FIFTH WEEK.

MONDAY.

Ephesians, Ch. VI. 1st to 19th verse.
Christ's Armor.

TUESDAY.

Revelation, Ch. IV. entire.
The Throne seen by John.

WEDNESDAY.

Revelation, Ch. V. entire.
The Sealed Book.

THURSDAY.

Revelation, Ch. VI. entire.
The Opening of the Seals.

FRIDAY.

Revelation, Ch. VII. 1st to 4th verse, and 9th to end.
Number of the Sealed.

DECEMBER.

FIRST WEEK.

MONDAY.

Revelation, Ch. VIII. entire.
Seventh Seal opened.

TUESDAY.

Revelation, Ch. XX. entire.
The Last Judgment.

WEDNESDAY.

Revelation, Ch. XXII. 1st to 15th verse.
The State of the Redeemed.

THURSDAY.

Psalms, LXXII. 1st to 20th verse.
The Kingdom of Messiah.

FRIDAY.

Psalms, XV. and XVI.
Resurrection of the Messiah.

SECOND WEEK.

MONDAY.

Isaiah, Ch. XXV. entire.
Blessings of the Gospel.

TUESDAY.

Isaiah, Ch. XL. 12th verse to end.
Omnipotence of God.

WEDNESDAY.

Isaiah, Ch. XLI. 1st to 15th verse.
God's Providence toward His Church.

THURSDAY.

Isaiah, ch. XLIII. 14th verse to end.
The Destruction of Babylon.

FRIDAY.

Isaiah, Ch. LI. 4th to 17th verse.
The Church to trust in Christ.

THIRD WEEK.

MONDAY.

Isaiah, Ch. LII. entire.
Prophecy of Christ.

TUESDAY.

Isaiah, Ch. LIII. entire.
Triumph of the Redeemer.

WEDNESDAY.

Isaiah, Ch. LIV. 11th verse to end.
Gracious Promise to the Church.

THURSDAY.

Isaiah, Ch. LV. entire.
Exhortation to Faith and Repentance.

FRIDAY.

Isaiah, Ch. LXI. entire.
Office of Christ.

FOURTH WEEK.

MONDAY.

Isaiah, Ch. LXIII. 1st to 15th verse and 17th verse to end.
Christ shows His Power to save.

TUESDAY.

St. Luke, Ch. III. 1st to 19th verse.
John's Testimony of Christ.

Pontius = Pŏn′shĭ-us.
Iturea = It′u-rē′a.
Trachonitis = Trăk′o-nī′tis.
Lysanias = Ly-sā′ni as.
Abilene = Ab′ĭ-lē′ne.
Caiaphas = Cā′ya-fas.

WEDNESDAY.

St. Luke, Ch. II. 8th to 21st verse.
Good Tidings brought to the Shepherds.

THURSDAY.

St. Matthew, Ch. II. entire.
The Wise Men worship Christ.

FRIDAY.

St. Matthew, Ch. III. entire.
Preaching of John the Baptist.

JANUARY.

FIRST WEEK.

MONDAY.

St. Matthew, Ch. IV. 1st to 18th verse.
Christ is tempted.

TUESDAY.

St. Matthew, Ch. IV. 18th verse to 13th of Ch. V.
Christ begins His Ministry.

WEDNESDAY.

St. Matthew, Ch. V. 13th to 27th verse.
Part of Sermon on the Mount.

THURSDAY.

St. Matthew, Ch. V. 33d verse to end.
Charity enjoined.

FRIDAY.

St. Matthew, Ch. VI. 1st to 19th verse.
Hypocrisy denounced.

SECOND WEEK.

MONDAY.

St. Matthew, Ch. VI. 19th verse to end.
Contentment enjoined.

TUESDAY.

St. Matthew, Ch. VII. 1st to 15th verse.
Faithful Prayer enjoined.

WEDNESDAY.

St. Matthew, Ch. VII. 15th verse to end.
Caution against False Teachers.

THURSDAY.

St. Matthew, Ch. VIII. 1st to 18th verse.
Christ heals many that are Sick.

FRIDAY.

St. Matthew, Ch. VIII. 18th verse to end.
Christ stills a Tempest.
Gergesenes = Ger'ge-sēnes.

THIRD WEEK.

MONDAY.

St. Matthew, Ch. IX. 1st to 18th verse.
Christ cures the Palsy.

TUESDAY.

St. Matthew, Ch. IX. 18th verse to end.
The Ruler's Daughter raised.

WEDNESDAY.

St. Matthew, Ch. X. 1st to 16th verse.
The Apostles sent forth.

THURSDAY.

St. Matthew, Ch. X. 16th verse to end.
Christ instructs His Apostles.

FRIDAY.

St. Matthew, Ch. XI. 1st to 16th verse.
John's Message to Christ.

FOURTH WEEK.

MONDAY.

St. Matthew, Ch. XI. 16th verse to end.
Chorazin and Bethsaida denounced.
Chorazin = Ko-rā′zin.
Bethsaida = Bĕth′sā′i-da.

TUESDAY.

St. Matthew, Ch. XII. 1st to 14th verse.
Christ Lord of the Sabbath.

WEDNESDAY.

St. Matthew, Ch. XII. 14th to 38th verse.
Christ vindicates His Ministry.
Beelzebub = Be-ĕl′ze-bŭb.

THURSDAY.

St. Matthew, Ch. XII. 46th verse to 10th verse of Ch. XIII.
Parable of the Sower.

FRIDAY.

St. Matthew, Ch. XIII. 10th to 24th verse.
Explanation of the Parable.

FEBRUARY.

FIRST WEEK.

MONDAY

St. Matthew, Ch. XIII. 24th to 36th verse.
Parables representing the Kingdom of Heaven.

TUESDAY.

St. Matthew, Ch. XIII. 36th to 47th verse.
Parables representing the Kingdom of Heaven.

WEDNESDAY.

St. Matthew, Ch. XIII. 47th verse to end.
The Galileans despise Christ.

THURSDAY.

St. Matthew, Ch. XIV. 1st to 22d verse.
John the Baptist beheaded.

FRIDAY.

St. Matthew, Ch. XIV. 22d verse to end.
Christ walks upon the Sea.

SECOND WEEK.

MONDAY.

St. Matthew, Ch. XV. 21st verse to end.
Christ heals Great Multitudes.

TUESDAY.

St. Matthew, Ch. XVI. 1st to 13th verse.
The Pharisees require a Sign.

WEDNESDAY.

St. Matthew, Ch. XVI. 13th verse to end.
Christ foretells His Death.

THURSDAY.

St. Matthew, Ch. XVII. 1st to 14th verse.
The Transfiguration of Christ.

FRIDAY.

St. Matthew, Ch. XVII. 14th verse to end.
The Tribute Money.

THIRD WEEK.

MONDAY.

St. Matthew, Ch. XVIII. 1st to 21st verse.
Humility taught.

TUESDAY.

St. Matthew, Ch. XVIII. 21st verse to end.
The Unforgiving Servant.

WEDNESDAY.

St. Matthew, Ch. XIX. 13th verse to end.
How to obtain Everlasting Life.

THURSDAY.

St. Matthew, Ch. XX. 1st to 17th verse.
Laborers in the Vineyard.

FRIDAY.

St. Matthew, Ch. XX. 17th verse to end.
The Disciples taught to be Lowly.

FOURTH WEEK.

MONDAY.

St. Matthew, Ch. XXI. 12th to 28th verse.
Buyers and Sellers driven out of the Temple.

TUESDAY.

St. Matthew, Ch. XXI. 33d verse to end.
The Wicked Husbandmen.

WEDNESDAY.

St. Matthew, Ch. XXII. 1st to 23d verse.
Parable of the Marriage Feast.

THURSDAY.

St. Matthew, Ch. XXII. 34th verse to 13th verse of Ch. XXIII.
Hypocrisy denounced.

FRIDAY.

St. Matthew, Ch. XXIII. 13th to 27th verse.
The Pharisees denounced.

MARCH.

FIRST WEEK.

MONDAY.

St. Matthew, Ch. XXIII. 27th verse to end.
Pharisees denounced.
Barachias = Băr'a-chī'as.

TUESDAY.

St. Matthew, Ch. XXIV. 1st to 15th verse, and 23d to 32d.
Destruction of the Temple foretold.

WEDNESDAY.

St. Matthew, Ch. XXIV. 32d verse to end.
The Sign of Christ's Coming.

THURSDAY.

St. Matthew, Ch. XXV. 1st to 14th verse.
Parable of the Ten Virgins.

FRIDAY.

St. Matthew, Ch. XXV. 14th to 31st verse.
Parable of the Talents.

SECOND WEEK.

MONDAY.

St. Matthew, Ch. XXV. 31st verse to end.
Of the Last Judgment.

TUESDAY.

St. Matthew, Ch. XXVI. 1st to 20th verse.
The Rulers conspire against Christ.

WEDNESDAY.

St. Matthew, Ch. XXVI. 20th to 36th verse.
The Passover.

THURSDAY.

St. Matthew, Ch. XXVI. 36th to 57th verse.
Judas betrays Christ.

FRIDAY.

St. Matthew, Ch. XXVI. 57th verse to end.
Christ accused before Caiaphas.
Caiaphas = Cā′ya-fas.

THIRD WEEK.

MONDAY.

St. Matthew, Ch. XXVII. 1st to 27th verse.
Christ delivered bound to Pilate.
Pontius = Pon′shĭ-us.

TUESDAY.

St. Matthew, Ch. XXVII. 27th to 45th verse.
Christ crucified.
Cyrene = Cy-rē′ne.
Golgotha = Gŏl′go-tha.

WEDNESDAY.

St. Matthew, Ch. XXVII. 45th verse to end.
The Burial of Christ.

Sabachthani = Sā′bak-thā′nī.
Magdalene = Măg′da-lē′ne.

THURSDAY.

St. Matthew, Ch. XXVIII. entire.
The Resurrection.

FRIDAY.

Jeremiah, Ch. XVII. 9th verse to end.
The Sabbath to be hallowed.

FOURTH WEEK.

MONDAY.

Genesis, Ch. I. 1st to 20th verse.
The Creation.

TUESDAY.

Genesis, Ch. I. 20th verse to end.
The Creation continued.

WEDNESDAY.

Genesis, Ch. II. 1st to 18th verse.
The First Sabbath and the Garden of Eden.

Pison = Pī′son.
Havilah = Hăv′i-lah.
Bdellium = Dĕl′yum.
Onyx = O′nyx.
Hiddekel = Hĭd′de-kĕl.

THURSDAY.

Genesis, Ch. VI. 5th verse to end.
The Cause of the Flood.

FRIDAY.

Genesis, Ch. VII. 11th verse to end.
The Flood.

FIFTH WEEK.

MONDAY.

Genesis. Ch. VIII. 1st to 15th verse.
The Waters assuage.

TUESDAY.

Genesis, Ch. XXXVII. 5th to 23d verse.
Joseph's Two Dreams.

WEDNESDAY.

Genesis, Ch. XXXVII. 23d verse to end.
Joseph sold as a Slave.

THURSDAY.

Deuteronomy, Ch. XXXIV. entire.
Moses views the Promised Land.

FRIDAY.

Joshua, Ch. I. 1st to 12th verse.
Joshua succeeds Moses.

APRIL.

FIRST WEEK.

MONDAY.

Psalms I. and II.
Happiness of the Godly. The Kingdom of Christ.

TUESDAY.

Psalm V.
David's Prayer for Guidance.

WEDNESDAY.

Psalm VIII.
God's Love to Man.

THURSDAY.

Psalm XVIII. 1st to 22d verse.
Thanksgiving for Blessings.

FRIDAY.

Psalm XIX.
Excellency of God's Laws.

SECOND WEEK.

MONDAY.

Psalms XXIII. and XXIV.
The Sovereignty of God.

TUESDAY.

Psalm XXV.
Prayer for Help in Affliction.

WEDNESDAY.

Psalm XXVII.
David's Faith in God's Protection.

THURSDAY.

Psalm XXXIII.
God's Goodness.

FRIDAY.

Psalm XXXIV.
They are Blessed who trust in God.

THIRD WEEK.

MONDAY.

Job, Ch. XXVII. entire.
The Excellency of Wisdom.

TUESDAY.

Job, Ch. XXXVII. 1st to 24th verse.
God to be feared for His Great Works.

WEDNESDAY.

Job, Ch. XXXVIII. 1st to 28th, omitting 8th verse.
God convinceth Job of Ignorance.

THURSDAY.

1 Samuel, Ch. XVII. 1st to 12th verse.
Goliath defies Israel.

Shochoh = Shō'koh.
Ephes-dammim = E'phes-dăm'mim.
Philistines = Phĭ-lĭs'tĭnes.

FRIDAY.

1 Samuel, Ch. XVII. 12th to 32d verse.
David comes to Camp.
Ephrathite = Eph'rath-ite.
Abinadab = A-bĭn'a-dăb.

FOURTH WEEK.

MONDAY.

1 Samuel, Ch. XVII. 32d to 55th, omitting 52d and 53d.
David kills Goliath.

TUESDAY.

1 Samuel, Ch. XVII. 55th to 17th verse of Ch. XVIII.
Jonathan loves David.

WEDNESDAY.

1 Samuel, Ch. XIX. 1st to 13th verse.
David escapes from Saul.

THURSDAY.

1 Samuel, Ch. XX. 1st to 24th verse.
Jonathan's Covenant with David.
Naioth = Nā'yoth.

FRIDAY.

1 Samuel, Ch. XX. 24th verse to end, omitting last clause of 30th verse.
Saul seeks to kill Jonathan.

MAY.

FIRST WEEK.

MONDAY.

2 Samuel, Ch. I. 1st to 13th verse.
Tidings of Saul's Death.
Amalekites = Am'a-lek-ītes.

TUESDAY.

2 Samuel, Ch. I. 13th verse to end.
David's Lamentation for Saul and Jonathan.
Askelon = As'ke-lŏn.

WEDNESDAY.

2 Samuel, Ch. XXII. 1st to 23d verse.
David's Thanksgiving for Deliverance.

THURSDAY.

1 Chronicles, Ch. XXVII. 1st to 11th verse.
David's Charge to Solomon.

FRIDAY.

2 Chronicles, Ch. II. entire.
The Building of the Temple.

SECOND WEEK.

MONDAY.

2 Chronicles, Ch. VI. 12th to 28th and 36th to end,
Solomon's Prayer at the Dedication.

TUESDAY.

1 Kings, Ch. X. 1st to 24th verse.
The Queen of Sheba's Visit.

WEDNESDAY.

1 Kings, Ch. XVII. entire.
Elijah fed by Ravens.

Tishbite = Tĭsh'bīte.
Cherith = Kē'rith.
Zarephath = Zăr'e-phăth.

THURSDAY.

Proverbs, Ch. II. entire.
Of the Excellency of Wisdom.

FRIDAY.

Proverbs, Ch. III. 13th verse to end.
Benefits of Wisdom.

THIRD WEEK.

MONDAY.

Proverbs, Ch. IV. 1st to 19th verse.
Obedience exhorted.

TUESDAY.

Proverbs, Ch. VI. 1st to 23d verse.
Things Hateful to God.

WEDNESDAY.

Proverbs, Ch. VIII. 1st to 21st and 32d to end.
The Invitation of Wisdom.

THURSDAY.

Ecclesiastes, Ch. I. entire.
All Things below are Vain.

FRIDAY.

Ecclesiastes, Ch. II. 1st to 18th verse.
Vanity of Human Courses.

FOURTH WEEK.

MONDAY.

Ecclesiastes, Ch. III entire.
Changes in Man's Life.

TUESDAY.

Ecclesiastes, Ch. IX. 1st to 7th and 11th to end.
Like Things happen to Good and Bad.

WEDNESDAY.

Ecclesiastes, Ch. XI. omitting 5th verse.
Death to be remembered in Life.

THURSDAY.

Ecclesiastes, Ch. XII. entire.
The Creator to be remembered in Youth.

FRIDAY.

Psalm XXXVII. 1st to 23d verse.
The Happy State of the Godly.

FIFTH WEEK.

MONDAY.

Psalm XXXVII. 23d verse to end.
The Happy State of the Godly.

TUESDAY.

Psalm XL. entire.
Benefit of Trusting in God.

WEDNESDAY.

Psalm XLVI. entire.
Confidence of the Church in God.

THURSDAY.

Psalm LI. entire.
David's Prayer for Forgiveness.

FRIDAY.

Psalm LXV. entire.
Infinite Power and Goodness of God.

JUNE.

FIRST WEEK.

MONDAY.

Psalm XC.
A Prayer of Moses.

TUESDAY.

Psalm CIII. entire.
Exhortation to Bless God.

WEDNESDAY.

Daniel, Ch. III. 1st to 19th verse.
Nebuchadnezzar sets up an Image.
Shadrach = Shā′drach.
Meshach = Mē′shak.
Abed-nego = A-bĕd′ne-gō.

THURSDAY.

Daniel, Ch. III. 19th verse to end.
Cast into the Fiery Furnace.

FRIDAY.

Daniel, Ch. IV. 1st to 19th verse.
Nebuchadnezzar's Dream.
Belshazzar = Bel-shăz′zar.

SECOND WEEK.

MONDAY.

Daniel, Ch. IV. 19th verse to end.
Daniel interprets the Dream.

TUESDAY.

Daniel, Ch. V. 1st to 17th verse.
Belshazzar's Impious Feast.

WEDNESDAY.

Daniel, Ch. V. 17th verse to end.
The Handwriting on the Wall.

THURSDAY.

Daniel, Ch. VI. 1st to 18th verse.
Daniel cast into a Den of Lions.
Darius = Da-rī′us.

FRIDAY.

Daniel, Ch. VI. 18th verse to end.
Daniel rescued.

THIRD WEEK.

MONDAY.

Daniel, Ch. VII. 1st to 15th verse.
The Vision of the Four Beasts.

TUESDAY.

Daniel, Ch. VII. 15th verse to end.
Daniel's Vision of God's Kingdom.

WEDNESDAY.

Daniel, Ch. IX. 1st to 20th verse.
Daniel's Confession and Prayer.

THURSDAY.

Daniel, Ch. IX. 20th verse to end.
Of the Seventy Weeks.

FRIDAY.

Daniel, Ch. X. entire.
The Glorious Vision Seen.
Hiddekel = Hĭd'de-kĕl.

FOURTH WEEK.

MONDAY.

Daniel, Ch. XII. entire.
Final Deliverance.

TUESDAY.

Psalm CXVI. entire.
The Psalmist praises God.

WEDNESDAY.

Psalm CXVIII. entire.
Exhortation to praise God for His Mercies.

THURSDAY.

Psalms CXX., CXXI., CXXIII., and CXXV.
Trust in God.

FRIDAY.

Psalms CXXXVII. and CXXXVIII.
Of the Captivity, and Truth of God's Word.

JULY.

FIRST WEEK.

MONDAY.

Proverbs, Ch. XX. 1st to 23d verse.
Moral Excellencies and their Opposites.

TUESDAY.

Proverbs, Ch. XXII. entire.
Moral Excellencies and their Opposites.

WEDNESDAY.

Proverbs, Ch. XXIV. entire.
Moral Excellencies and their Opposites.

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